Racal Instruments™

1260-39

Multiple Purpose Switch Module

PUBLICATION NO. 980673-043 Rev. A

Astronics Test Systems Inc.
4 Goodyear, Irvine, CA 92618
Tel: (800) 722-2528, (949) 859-8999; Fax: (949) 859-7139

atsinfo@astronics.com atssales@astronics.com
atshelpdesk@astronics.com http://www.astronicstestsystems.com

Copyright 1998 by Astronics Test Systems Inc. Printed in the United States of America. All rights reserved.
This book or parts thereof may not be reproduced in any form without written permission of the publisher.

THANK YOU FOR PURCHASING THIS ASTRONICS TEST SYSTEMS PRODUCT

For this product, or any other Astronics Test Systems product that incorporates software drivers, you may access our web site to verify and/or download the latest driver versions. The web address for driver downloads is:

http://www.astronicstestsystems.com/support/downloads

If you have any questions about software driver downloads or our privacy policy, please contact us at:

atsinfo@astronics.com

WARRANTY STATEMENT

All Astronics Test Systems products are designed to exacting standards and manufactured in full compliance to our AS9100 Quality Management System processes.

This warranty does not apply to defects resulting from any modification(s) of any product or part without Astronics Test Systems express written consent, or misuse of any product or part. The warranty also does not apply to fuses, software, non-rechargeable batteries, damage from battery leakage, or problems arising from normal wear, such as mechanical relay life, or failure to follow instructions.

This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular use. The remedies provided herein are buyer's sole and exclusive remedies.

For the specific terms of your standard warranty, contact Customer Support. Please have the following information available to facilitate service.

1. Product serial number
2. Product model number
3. Your company and contact information

You may contact Customer Support by:

E-Mail:	atshelpdesk@astronics.com	
Telephone:	+1 800 722 3262	(USA)
Fax:	+1 949 859 7139	(USA)

RETURN OF PRODUCT

Authorization is required from Astronics Test Systems before you send us your product or sub-assembly for service or calibration. Call or contact Customer Support at 1-800-722-3262 or 1-949-859-8999 or via fax at 1-949-859-7139. We can also be reached at: atshelpdesk@astronics.com.

If the original packing material is unavailable, ship the product or sub-assembly in an ESD shielding bag and use appropriate packing materials to surround and protect the product.

PROPRIETARY NOTICE

This document and the technical data herein disclosed, are proprietary to Astronics Test Systems, and shall not, without express written permission of Astronics Test Systems, be used in whole or in part to solicit quotations from a competitive source or used for manufacture by anyone other than Astronics Test Systems. The information herein has been developed at private expense, and may only be used for operation and maintenance reference purposes or for purposes of engineering evaluation and incorporation into technical specifications and other documents which specify procurement of products from Astronics Test Systems.

TRADEMARKS AND SERVICE MARKS

All trademarks and service marks used in this document are the property of their respective owners.

- Racal Instruments, Talon Instruments, Trig-Tek, ActivATE, Adapt-A-Switch, N-GEN, and PAWS are trademarks of Astronics Test Systems in the United States.

DISCLAIMER

Buyer acknowledges and agrees that it is responsible for the operation of the goods purchased and should ensure that they are used properly and in accordance with this document and any other instructions provided by Seller. Astronics Test Systems products are not specifically designed, manufactured or intended to be used as parts, assemblies or components in planning, construction, maintenance or operation of a nuclear facility, or in life support or safety critical applications in which the failure of the Astronics Test Systems product could create a situation where personal injury or death could occur. Should Buyer purchase Astronics Test Systems product for such unintended application, Buyer shall indemnify and hold Astronics Test Systems, its officers, employees, subsidiaries, affiliates and distributors harmless against all claims arising out of a claim for personal injury or death associated with such unintended use.

FOR YOUR SAFETY

Before undertaking any troubleshooting, maintenance or exploratory procedure, read carefully the **WARNINGS** and **CAUTION** notices.



This equipment contains voltage hazardous to human life and safety, and is capable of inflicting personal injury.



If this instrument is to be powered from the AC line (mains) through an autotransformer, ensure the common connector is connected to the neutral (earth pole) of the power supply.



Before operating the unit, ensure the conductor (green wire) is connected to the ground (earth) conductor of the power outlet. Do not use a two-conductor extension cord or a three-prong/two-prong adapter. This will defeat the protective feature of the third conductor in the power cord.



Maintenance and calibration procedures sometimes call for operation of the unit with power applied and protective covers removed. Read the procedures and heed warnings to avoid “live” circuit points.

Before operating this instrument:

1. Ensure the proper fuse is in place for the power source to operate.

2. Ensure all other devices connected to or in proximity to this instrument are properly grounded or connected to the protective third-wire earth ground.

If the instrument:

- fails to operate satisfactorily
- shows visible damage
- has been stored under unfavorable conditions
- has sustained stress

Do not operate until performance is checked by qualified personnel.

NOTE FOR SYSTEMS WITH 1260-OPT 01T

The “Module-Specific Syntax” section of this manual shows the command syntax for the 1260-01S Smart Card. If you are using the newer 1260-01T Smart Card, the commands will NOT work as shown.

Consult the 1260-01T Manual for a description of the commands that may be used with the 1260-01T Smart Card.

> The channel numbers described in this manual are valid for the 1260-01T. The channel numbers continue to be used for the 1260-01T.

The syntax of the commands that use channel numbers has changed for those cards controlled by the 1260-01T.

The new syntax used to close a channel is:

    CLOSE (@ <module address> (<channel>))

For example, for a relay module whose <module address> is set to 7, closing <channel> 0 is performed with the command:

    CLOSE (@7 (0))

Using the older 1260-01S, the command would be (as shown in this manual):

    CLOSE 7.0

Many other command syntax differences exist. Please consult chapter 2 of the 1260-01T manual for a description of the commands that are available for the 1260-01T.

Control Information for the 1260-39

The following information describes the control-register-to-relay-channel mapping for a 1260-39 Relay Module. This information may be used to control a 1260-39 when using a 1260-01T in the register-based mode of operation.

Each relay on this module is controlled by setting or clearing a single bit within a Control Register. Control Registers on the module operate 8 channels simultaneously. There are eight control bits per Control Register. Setting the bit to a 1 closes the relay; setting the bit to a 0 opens the relay.

The table below shows the mapping from logical channels to control bits. The logical channels are used when operating the relay module in message-based mode. The control bits within the Control Registers are used to operate the module in register-based mode.

Each Control Register is located 2 addresses from the previous Control Register. That is, each Control Register is located at an odd address. This is shown in Table 2-2 of the 1260-01T manual. Control Register 0 is located at the “Base A24 Address” for the module. Consult the “Register-Based Operation” Section of Chapter 2 of the 1260-01T manual for a description of calculating control register addresses.

Channel	Control Register	Control Bit
0	9	0
1	9	1
2	9	2
3	9	3
4	9	4
1000	0	0
1001	0	1
1002	0	2
1003	0	3
1004	0	4
1005	0	5
1006	0	6
1007	0	7
1008	1	0
1009	1	1
1010	1	2
1011	1	3
1012	1	4
1013	1	5
1014	1	6
1015	1	7
1016	2	0
1017	2	1
1018	2	2
1019	2	3
1020	2	4
1021	2	5
1022	2	6
1023	2	7
1024	3	0
1025	3	1
1026	3	2
1027	3	3
1028	3	4
1029	3	5
1030	3	6
1031	3	7
1032	4	0

Channel	Control Register	Control Bit
1033	4	1
1034	4	2
1035	4	3
1036	4	4
1037	4	5
1038	4	6
1039	4	7
1040	5	0
1041	5	1
1042	5	2
1043	5	3
1044	5	4
1045	5	5
1046	5	6
1047	5	7
2000	6	0
2001	6	1
2100	6	2
2101	6	3
2200	6	4
2201	6	5
2300	6	6
2301	6	7
2400	7	0
2401	7	1
2500	7	2
2501	7	3
3000	7	4
3001	7	5
3002	7	6
3003	7	7
3100	8	0
3101	8	1
3102	8	2
3103	8	3
3200	8	4
3201	8	5
3202	8	6
3203	8	7
4000	10	0
4001	10	1
4002	10	2
4003	10	3
4004	10	4
4005	10	5
4006	10	6
4007	10	7
4010	11	0
4011	11	1
4012	11	2
4013	11	3
4014	11	4
4015	11	5
4016	11	6
4017	11	7
4100	12	0
4101	12	1
4102	12	2
4103	12	3
4104	12	4
4105	12	5
4106	12	6
4107	12	7
4110	13	0
4111	13	1

Channel	Control Register	Control Bit
4112	13	2
4113	13	3
4114	13	4
4115	13	5
4116	13	6
4117	13	7
4200	14	0
4201	14	1
4202	14	2
4203	14	3
4204	14	4
4205	14	5
4206	14	6
4207	14	7
4210	15	0
4211	15	1
4212	15	2
4213	15	3
4214	15	4
4215	15	5
4216	15	6
4217	15	7
4300	16	0
4301	16	1
4302	16	2
4303	16	3
4304	16	4
4305	16	5
4306	16	6
4307	16	7
4310	17	0
4311	17	1
4312	17	2
4313	17	3
4314	17	4
4315	17	5
4316	17	6
4317	17	7
4400	18	0
4401	18	1
4402	18	2
4403	18	3
4404	18	4
4405	18	5
4406	18	6
4407	18	7
4410	19	0
4411	19	1
4412	19	2
4413	19	3
4414	19	4
4415	19	5
4416	19	6
4417	19	7

Table of Contents

List of Figures

DOCUMENT CHANGE HISTORY

Revision	Date	Description of Change
	3/19/2001	Publication
A	6/23/2014	Initial release

Chapter 1

MODULE SPECIFICATION

Introduction

The 1260-39 high-density multi-purpose switch is a multi-channel single wire device capable of being configured in many ways. It contains 48 SPST switches, 6 SPDT switches, 3-1 x 4 muxes, 5-2 x 8 matrices and 5 DPST power relays. The unit can be configured as any combination of switches as well. For example, it can have numerous single pole configurations made up from the SPST switches.

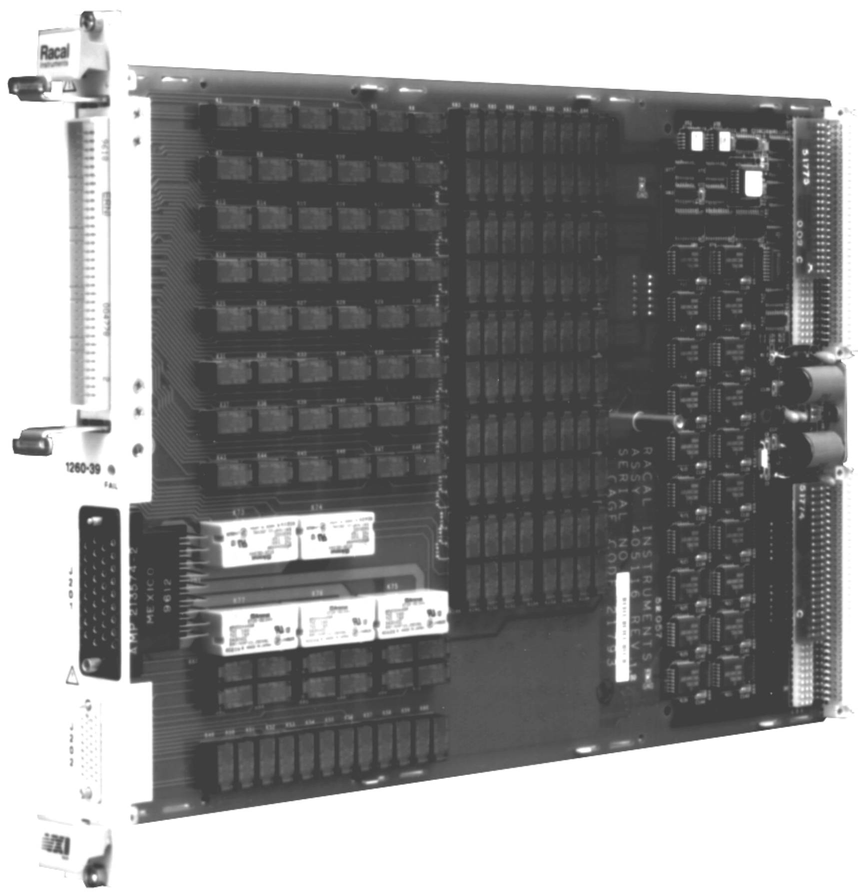


Figure 1-1, 1260-39

1260-39 Module Specification

	Signal Relays	Power Relays
Maximum Switch Power	125VA, 60W	2000VA, 150W
Maximum Switch Voltage	125VAC, 1 l0VDC	220VDC, 220VAC
Maximum Switch Current	1A AC, 1A DC	10A AC, 10A DC
Bandwidth (50Ω)	> 30MHz	5KHz
Insertion Loss (50Ω)	<3dB @ 30 MHz <2dB to 10 MHz <1dB to 1MHz	2db @ 5KHz
Crosstalk (50Ω)	<-70dB to 100KHz <-60dB to 1 MHz <-50dB at 10MHz	-5db @ 5KHz
Isolation (50Ω)	> 65dB to 100KHz > 55dB to 1 MHZ >45dB at 10 MHZ	-95db @ 5KHz
Path Resistance	< 1.5Ω	< 1.0Ω
Thermal EMF	<20µV	
Impedance		
Input-Output	50Ω Nominal	
Input to Chassis	> 2000MΩ	
Output to Chassis	> 2000MΩ	
Capacitance		
Channel to Chassis	<5pF	
Temperature		
Operating	0^{0}C to +55^{0}C	
Non-Operating	-55^{0}C to +75^{0}C	
Relative Humidity	*95+1-5%* RH Non-Condensing <30^{0}C 75+/5 %RH > 30^{0}C 45+/5 %RH > 40^{0}C	
Altitude		
Operating	15,000 ft	
Non-Operating	15,000 ft	
Vibration	0.0131” double amplitude, 5-55Hz	
Shock, functional	30g, 11 msec, ½ sine wave	

Bench Handling 4 inch drop

Cooling Requirement
Without Option 01 installed
Aifflow 2.0 liters/sec
Backpressure 0.05mm H_20

With Option 01 installed
Airilow 3.0 liters/sec
Backpressure 0.2mm H_20

Power Requirement
Without Option 01 installed
+5V Static Current, I_{pm} 0.4A
+5V Dynamic Current, I_{dm} 0.075A

With Option 01installed
+5V Static Current, I_{pm} 2.SA.
+5V Dynamic Current, I_{dm} 0.225A
+24V Static Current, I_{pm} 6mA per energized relay
+24V Dynamic Current, I_{dm} 0A

MTBF

>100,000 Hours, calculated (per MIL-HBK-217, ground benign, 30 deg. C)

Weight

Without Option 01 installed 3.21b (1.45kg)
With Option 01 installed 3.5lb (1.60kg)

Minimum Option 01 Firmware Revision 29.1 (Rev. T)

Ordering Information

Listed below are part numbers for both the 1260-39 Switch Module and available mating connector.

Item	Description	Part #
1260-39 Switch Module	1260-39 Single wire, 1 amp switch	407505
160-Pin Mating Connector	160-Pin Conn. Kit w/backshell and pins	407407
Cable Assy, 6ft, sleeved	160-Pin Cable Assy, 6ft, 24GA	407408
Cable Assy, l2ft, sleeved	160-Pin Cable Assy, l2ft, 24GA	407409
Additional Manual		980673-043

Safety

Refer to the **"FOR YOUR SAFETY"** page preceding the Table of Contents. Follow all NOTES, CAUTIONS and WARNINGS to ensure personal safety and prevent damage to the instrument.

Product Support

Racal Instruments has a complete Service and Parts Department. If you need technical assistance or should it be necessary to return your product for servicing, contact our Customer Support department.

Chapter 2

INSTALLATION INSTRUCTIONS

Unpacking and Inspection

1. Before unpacking the switching module, check the exterior of the shipping carton for any signs of damage. All irregularities should be noted on the shipping bill and reported.

2. Remove the instrument from its carton, preserving the factory packaging as much as possible.

3. Inspect the switching module for any defect or damage. Immediately notify the carrier if any damage is apparent.

4. Have a qualified person check the instrument for safety before use.

Reshipment Instructions

1. Use the original packing material when returning the switching module to Astronics Test Systems for servicing. The original shipping carton and the instrument's plastic foam will provide the necessary support for safe reshipment.

2. If the original packing material is unavailable, wrap the switching module in an ESD Shielding bag and use foam to surround and protect the instrument.

3. Reship in either the original or a new shipping carton.

Option 01 Installation

Installation of the Option 01 into the 1260-39 is described in the Installation section of the 1260 Series VXI Switching Cards Manual, under the Option 01 installation section.

Module Installation

Installation of the 1260-39 Switching Module into a VXI mainframe, including the setting of switches SW1-1 through SW1-4, 5W2 and 5W3, is described in the Installation section of the 1260 Series VXI Switching Cards Manual. Configuration of switches SWl-5 must be configured in the OFF state, and SW1-6 must be configured in the ON state.

Chapter 3

MODULE SPECIFIC SYNTAX

Module Configuration

The 1260-39 is a multiple configuration switch module consisting of:

- 5 Double-Pole Single-Throw (DPST) relays
- 48 Single-Pole Single-Throw (SPST) relays
- 6 1x2 1-wire Multiplexer (MUX) relays
- 3 1x4 1-wire MUX relays
- 5 2x8 1-wire Matrices

The 1260-39 is a multi-purpose switch consisting of several "blocks," each with different configurations. The first block consists of 48 SPST switches that may be software configured to operate as SPST's, 2PST's, 3PST's, etc., without the use of hardware jumpers. The second block consists of6 - 1X2 muxes (SP2T's), that can also be software configured into various combinations. The third block consists of 3 - 1X4 muxes (SP4T's), also software configurable. The fourth block consists of 5 - 2X8 matrices, each having two inputs that can be directed to any of eight outputs. The last block has 5 DPST power relays capable of switching ten amperes per circuit. All switches are passive switches, that is they consist of electro-mechanical relays, and therefore inputs and outputs are interchangeable.

Reference should be made to Figure 3-1**,** 1260-39 Module Configuration Block Diagram.

Front Panel Connectors

The 1260-39's front panel connectors are labeled J200, J201, and 3202. The connector labeled 3200 is 5 x 32 (160-pin) DIN 41 612 male. The pin numbering is shown in Figure 3-2.

The connector labeled 3201 is a 34 position connector. It is used for the high power (10 Ampere) switching and is a rack and panel type. The connector labeled J202 is a 34 pin rack and panel type. Signal ground pins are provided for terminating shields and to

allow the use of coaxial cable when using higher frequency signals (i.e. above 10 MHz). The mapping of channel numbers to connector pins and the available mating connector cable are given in Table **3-1.**

Mating Connectors

There are no mating connectors shipped with the 1260-39 module. Racal Instruments offers the following accessories for mating connectors (see ordering information for part numbers):

- 160-Pin Connector Kit with backshell and pins
- 160-Pin Cable Assy, 6ft, 24GA
- 160-Pin Cable Assy, 12ft, 24GA

The 160-Pin Connector kit consists of a connector housing, customized backshell and 170 crimp pins. The backshell design has been optimized for system integration. The connector kit has been designed for 22 to 26 gauge cable. The crimp pin will lock or 'click' into the connector housing only when installed correctly. The assembler should ensure that the crimp pin is locked by tugging on the cable after insertion.

Mating connectors may be purchased for 3201 and 3202 from the following manufacturers:

3201	AmpInd.	213300-1
	Winchester	TMRAC 34P JTDH
J202	Positronics	SGMC34MOE1OOJO
	Winchester	XSRM34PNSS 1000

The hand crimp tool for loose crimp contacts is Emi Part Number 014 374. The disassembly tool is Erni Part Number 471 555.

1260-39 Module Specific Syntax

The 1260-39 card supports nearly all of the 1260 commands described in Section 3.4 of the 1260 Option 01 manual. The only commands which are NOT supported are the READ, WRITE, and INCL commands.

The following 1260 commands use "relay descriptors" to identify one or more relays:

OPEN
CLOSE
EXCL

SLIST

Relay descriptors are always unique for each 1260 module. The following paragraph describes the relay descriptor syntax for the 1260-39 module.

1260-39 Relay Descriptors

A "relay descriptor" identifies a relay (or range of relays) to be operated. The "relay descriptor" is unique for each 1260 module type.

The "relay descriptor" for the 1260-39 has the form:

<module address>. <channel range>

Where:

<module address> is an integer between 1 and 12, inclusive.

NOTE:

The <module address> used here is not the VXIbus defined Logical Address of the 1260 Series Master. It is unique to the 1260 Series and describes the switching module in relation to the Master. This address corresponds to the binary value of the switch setting of SW1 on the switching module PCB. Refer to the Installation Section of the 1260 Series VXI Switching Cards Manual for more information.

<channel range> is a single relay, or a list of relays. A comma or a hyphen may be used to separate relays in a <channel range>. When a comma is used, only the specific relays are operated; when a hyphen is used, all relays between the relays are operated.

Each relay is identified by a single 4-digit channel number using the format:

<1 digit relay type> <1 digit selector> <2 digit relay identifier>

The valid channels are:

0000, 0001, 0002, 0003, 0004	5 DPST relays
1000 through 1047	48 SPST relays
2000, 2001	1st 1x2 MUX
2100,2101	2nd 1x2 MUX
2200, 2201	3rd 1x2 MUX
2300, 2301	4th 1 x2 MUX
2400, 2401	5th 1x2 MUX
2500, 2501	6th 1x2 MUX
3000, 3001, 3002, 3003	1st 1x4 MUX
3100, 3101, 3102, 3103	2nd 1x4 MUX
3200, 3201, 3202, 3203	3rd 1x4 MUX
4000 through 4007	1st 2x8 Matrix, first row
4010 through 4017	1st 2x8 Matrix, second row
4100 through 4107	2nd2x8 Matrix, first row
4110 through 4117	2nd 2x8 Matrix, second row
4200 through 4207	3rd 2x8 Matrix, first row
4210 through 4217	3rd 2x8 Matrix, second row
4300 through 4307	4th 2x8 Matrix, first row
4310 through 4317	4th 2x8 Matrix, second row
4400 through 4407	5th 2x8 Matrix, first row
4410 through 4417	5th 2x8 Matrix, second row

The first digit of the 4-digit channel number determines which type of relay is being operated. If the first digit is a 0, then one of the DPST relays is being operated. If the first digit of the channel number is a 1, then one of the SPST relays is being operated, and so on.

The second digit of the 4-digit channel number selects one of the instances of the type of relay. This can be seen with the 1x2 MUX, 1x4 MUX, and matrix relays. For example, channel numbers 4000 through 4017 identify relays within the first matrix, while channel numbers 4100 through 4117 identify relays within the second matrix. Likewise, channel numbers 3000 through 3003 identify relays within the first 1x4 MUX, while channel numbers 3200 through 3203 identify relays within the third 1x4 MUX.

The last two digits of the channel number uniquely identify the relay to operate. In the case of the matrix relays, the 10's digit selects the row of the matrix, while the 1's digit selects the column.

NOTE:

The leading digits may be omitted if 0. That is, for the 5 DPST relays, channels "0", "1", "2", "3", and "4" are accepted.

The following examples, using the CLOSE command, show the various formats which are used for 1260-39 relay descriptors. Each of the samples below shows a module address of 7 for the 1260-39;

```
CLOSE 7.0                 -- close a DPST relay
CLOSE 7.0, 4              -- close the first and last DPST relay
CLOSE 7.0-4               -- close all DPST relays
CLOSE 7.1000              -- close a SPST relay
CLOSE 7.1004,1016,1033    --close3SPSTrelays
CLOSE 7.1000-1016,1047    --closethefirstl7,andlastSPST
                            relays
CLOSE 7.4312              -- In the 4th 2x8 matrix, close cross
                          -- point in second row, third column
                          -- (row 1, column 2).
```

When a channel is closed two front-panel pins are connected. (For the DPST relays, two pairs of pins are connected). Refer to **Tables 3-1** through 3-5 which show channel to front panel pin out mapping.

CLOSE Command

The CLOSE command is used to close one or more channels.

Example:

CLOSE 7.0002

This CLOSE command will close channel 0002 of the module at switch card module address 7. This is one of the 5 DPST relays.

Example:

CL 7.4400-4407

This CLOSE command will close all 8 columns of the first row of the fifth 2x8 matrix.

Example:

CL 7.1011,2001,3003,4113

This CLOSE command will close channels 1011, 2001, 3003, and 4113 of the module at switch card module address 7. Channel 1011 is a SPST relay; channel 2001 is a 1~ MUX relay, channel 3003 is a 1x4 MUX relay, and channel 4113 is one of the 2x8 matrix relays.

Note that channels remain closed until one of the following occurs:

- an OPEN command is used to specifically open the relay
- a RESET command is executed, opening all relays
- a VXI Word Serial Clear command is received, opening all relays
- a VXI hard or soft reset is received
- a relay on the same exclude list (see EXCL Command, paragraph *3.2.5)* is closed
- power to the VXI bus chassis is turned off.

OPEN Command

The OPEN command is used to open a channel.

Example:

```
OP 7.4014
```

This OPEN command will open channel 4014 of the module at switch card module address 7.

Example:

```
OP 7.0003-1041
```

This OPEN command will open all of the channels between 0003 and 1041 of the module at switch card module address 7. Since channel numbers are taken in increasing order, this includes channels 0003, 0004, and 1000 through 1041.

Example:

```
OP 7.4110-4117,4305-4312
```

This OPEN command will open all channels between 4110 and 4117, and all channels between 4305 and 4312. This indicates that all relays in the second column of the second 2x8 matrix will be opened. In addition, channels 4305 through 4307 plus

channels 4310 through 4312 will be opened. These are the last three columns of the first row, and the first three columns of the second row of the fourth 2x8 matrix.

EXCL Command

The EXCL command is used to define an "exclude group". Two or more relays may be defined on a single exclude group. Multiple exclude groups may be defined.

Relays in an exclude group are considered mutually exclusive from each other. When a relay in an exclude group is closed, all other relays in the same exclude group are opened.

The EXCL command uses the syntax:

EXCL <exclude list> [E; <exclude list>]

Where:

<exclude list> is a list of two or more relay descriptors. The relays do NOT have to be on the same 1260 module, nor do they have to be the same type of module.

Example:

Assume the 1260 Option 01 controls a 1260-40A card with module address 2, and a 1260-39 card with module address 7.

EXCL 2.0000-0123E;7.1000-1047E;2.0200-0323;7.0-5

This example defines three exclude groups. The first consists solely of 1260-40A relays, channels 0000 through 0123. The second consists solely of 1260-39 relays, channels 1000 through 1047. The third consists of a mix of 1260-40A relays and 1260-39 relays.

After an EXCL command is executed, the 1260 Option 01 will ensure that at most one relay in any exclude group is closed at one time. For example, suppose relay 7.1023 is presently closed. Closing relay 7.1000 will cause the 1260 Option 01 to first open relay 7.1023 before closing relay 7.1000. Similarly, if relay 7.0004 is presently closed, then closing relay 2.0319 will cause the 1260 Option 01 to first open relay 7.0004 before closing relay 2.0319.

PDATAOUT and PSETUP Module Identification

The first line of the reply to the PDATAOUT and PSETUP commands for the 1260-39 shall be:

xxx. 1260-39 HIGH DENSITY MULTI-PURPOSE SWITCH MODULE

where:

XXX is the module address of the 1260-39 ("001" to "012"). All other reply lines for these commands shall follow the syntax used for all of the other 1260 series relay cards. Note that the lines of the reply for the PDATAOUT command will contain relay descriptors which follow the syntax described in paragraph 3.2.1.

PDATAOUT Command

The PDATAOUT command causes the specified module to reply with a list of relays which are closed on that module. The syntax for the PDATAOUT command is:

PD[ATAOUT] <module list> [; <module list>...]

where:

<module list> : := <module> I <module> - <module>

<module> : := 1I2I3I4I5I6I7I8I9I10I11I12

For example:

PD 1;3-6;9

causes each of the modules with module addresses 1, 3, 4, 5, 6, and 9 to reply with a list of closed relays.

The reply to the PDATAOUT consists of three or more reply lines, each of which are terminated with a carriage return followed by a linefeed. A minimum of three reply lines are returned.

The FIRST line is as follows:

<module>. 1260-39 HIGH DENSITY MULTI-PURPOSE SWITCH MODULE

where <module> is the module address of the 1260-39 card ("000" to "012").

The LAST line is as follows:

<module>.END

Note that there is no space character between the period and the

"B" of the "END" string.

Lines 2 through N-i will have the form:

<module>. [<channel range> [,<channel range> ..]] [,]

where:

<module> : : 001 through 012

<channel range> ::= <channel> I <channel> - <channel>

<channel> ::- 0000 through 0004 or
1000 through 1047 or
2000, 2001, 2100, 2101, etc.

If there are no closed relays, the second line will consist solely of the module addresses and the period. There will be no channels listed, and there will be a total of three lines returned. For example:

```
007.    1260-39 HIGH DENSITY MULTI-PURPOSE SWITCH MODULE
007.
007. END
```

If the second line can hold all of the closed relays, there will be a total of three lines returned. For example:

```
007.   1260-39 HIGH DENSITY MULTI-PURPOSE SWITCH MODULE
007.    0000,1005-1013,2100,2101,4106-4114
007. END
```

if the second line Cannot hold all of the closed relays, the last character on the line before the carriage return/linefeed will be a comma. This indicates that more data is to follow on the third line. If the third line cannot hold all of the remaining closed relays, it too will be terminated with a comma, and more data will follow on the fourth line. The last line before the "END" line will NOT have a comma at the end. For example:

```
007.    1260-39 HIGH DENSITY BASIC SWITCH MODULE
007.    0000,0001,0004,1000,1022-1027,1033,1035,1037,1039,2001,
007.    2200,2201,3000,3002,3100,3101,3103,3201,3202,4001,4112,
007.    4310-4313,4317,4401,4406,4410,4413,4417
007.END
```

PSETUP Command

The PSETUP command causes a specified module setup to be transmitted to the VXI bus Controller. The syntax used is:

PS [ETUP] <module address>[;<module address>] [;<module address>]

where:

<module address> is the switch card address.

The responses to the PSETUP command for the 1260-39 consists of three lines. Each line consists of a three-digit module address, followed by some information. A sample reply to the PSETUP command is shown below:

```
007.   1260-39 HIGH DENSITY MULTI-PURPOSE SWITCH MODULE
007.   BBM
007.END
```

The first line of the response to the PSETUP command is a header line. The header describes the model number.

The second reply line designates the setup mode for scanning. By default, this is Break-Before-Make ("BBM"). The other setup modes which may be returned on the second line include Make-Before-Break ('~~B"), and Immediate ("IMM"). The setup mode may be changed using the "SETUP" command, described in section 3.4 of the 1260 Option 01 manual.

The last line containing the "END" characters denotes no more information to report.

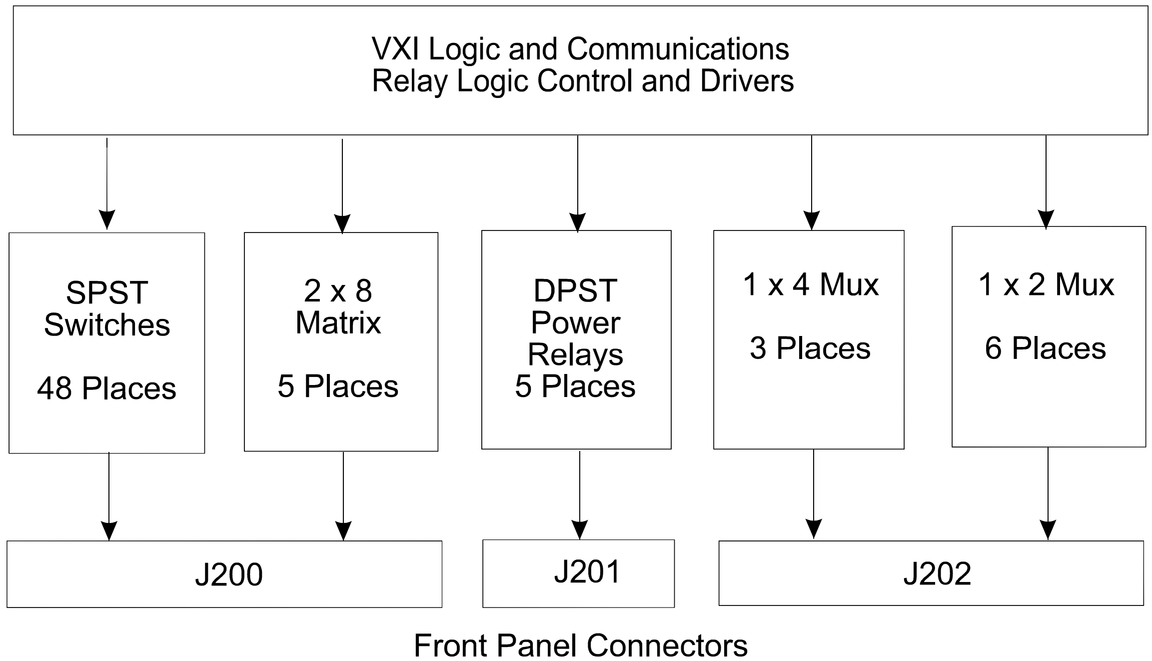


Figure 3-1, 1260-39 Module Configuration Block Diagram

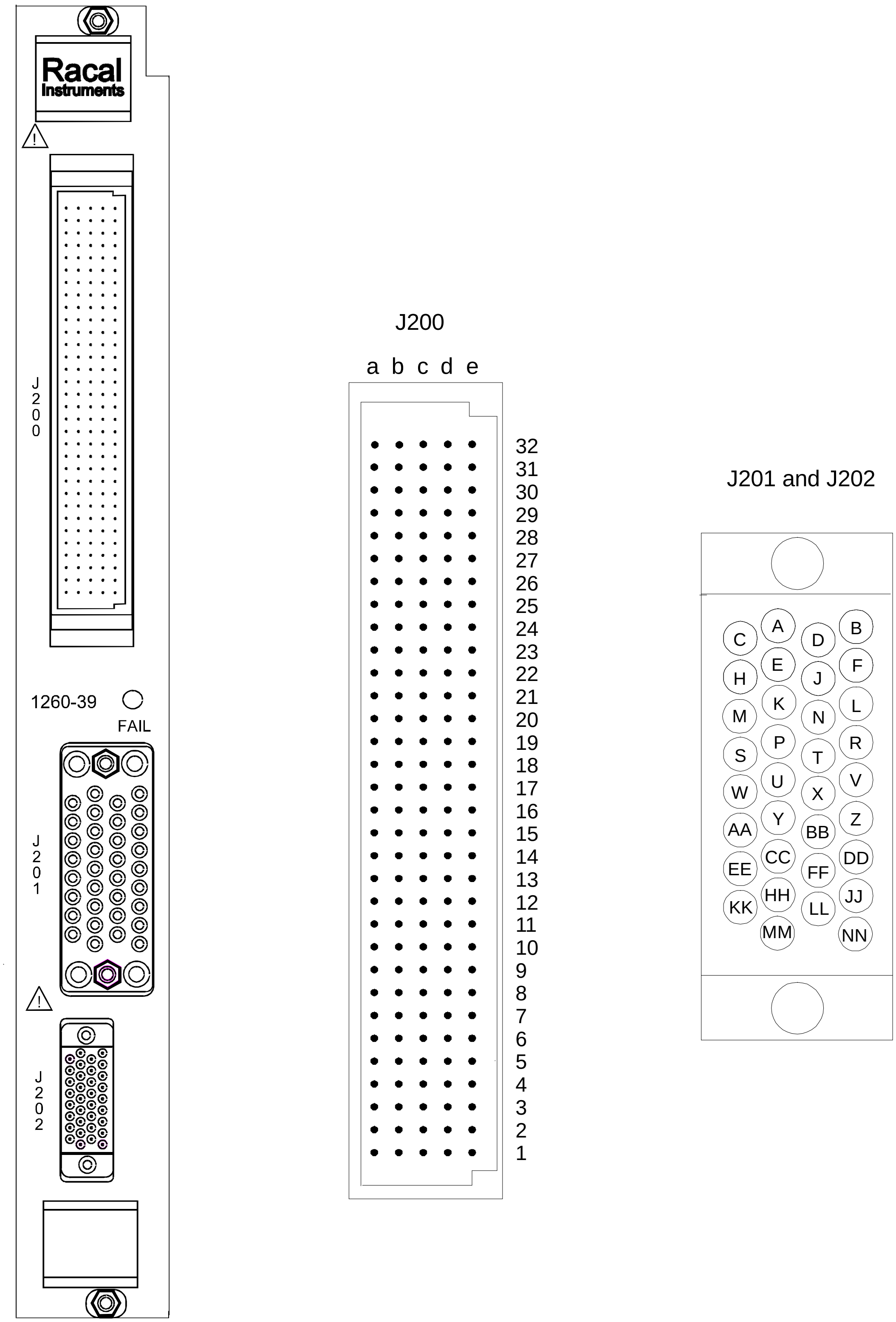


Figure 3-2, 1260-39 Pin Configuration, Front View

Table 3-1. Channel to Connector Pin Mapping for DPST Relays

Channel	Relay	Connector In	Schematic Channel	Connector Out	Schematic Channel
0000	K73	J201-1 (A)	CH00581	J201-2 (B)	CH0058A
		J201-3 (C)	CH00591	J201-4 (D)	CH00S9A
0001	K74	J201-5 (E)	CH00601	J201-6 (F)	CH0060A
		J201-9 (K)	C1100611	J201-10 (L)	CH0061A
0002	K75	J201-18 (V)	C1100621	J201-16 (T)	CH0062A
		J201-14 (R)	CH00631	J201-12 (N)	CH0063A
0003	K76	J201-34(NN)	CH00641	J201-30 (JJ)	CH0064A
		J201-22(Z)	CH00651	J201-26 (DD)	CH0065A
0004	K77	J201-27 (EE)	CH00661	J201-3 1 (KK)	CH0066A
		J201-32 (LL)	CH00671	J201-33 (MM)	C110067A

Table 3-2. Channel to Connector Pin-Out Mapping for SPST Relays

Channel	Relay	Connector In	Schematic Channel	Connector Out	Schematic Channel
1000	K1	J200-C32	CH0001I	J200-A30	CH0001A
1001	K2	J200-C31	CH00021	J200-A29	CH0002A
1002	K3	J200-B32	C1100031	J200-B30	CH0003A
1003	K4	J200-B3 1	CH0004I	J200-B29	CH0004A
1004	Ks	3200-A32	CH000SI	J200-C30	CH0005A
1005	K6	J200-A3 1	CH00061	J200-C29	CH0006A
1006	K7	J200-C28	CH00071	J200-E27	CH0007A
1007	K8	J200-D28	CH00081	J200-C27	CH0008A
1008	K9	J200-A28	CH00091	J200-A26	CH0009A
1009	K10	J200-B28	CH00101	J200-E26	CH0010A
1010	K11	J200-D29	CH0011I	J200-C26	CH0011A

Table 3-2. Channel to Connector Pin-Out Mapping for SPST Relays (Continued)

Channel	Relay	Connector In	Schematic Channel	Connector Out	Schematic Channel
1011	K12	J200-E29	CH00121	J200-D26	CH0012A
1012	K13	J200-A24	CH0013I	J200-D24	CH0013A
1013	K14	J200-C25	CH00141	J200-C24	CH0014A
1014	K15	J200-D25	CH00151	J200-E23	CH0015A
1015	K16	J200-E25	CHOO16I	3200-B23	CH0016A
1016	K17	J200-A25	CH00171	J200-D23	CH0017A
1017	K18	J200-B26	CH00181	J200-C23	CH0018A
1018	K19	J200-A21	CH00191	J200-E20	CH0019A
1019	K20	J200-B21	CH00201	J200-B20	CH0020A
1020	K21	J200-D22	CH00211	J200-A19	CH0021A
1021	K22	J200-E21	CH00221	J200-D20	CH0022A
1022	K23	J200-E22	CH00231	J200-C19	CH0023A
1023	K24	J200-C22	CH00241	J200-B 19	CH0024A
1024	K25	J200-C18	CH00251	J200-C14	CH0025A
1025	K26	J200-D18	CH00261	J200-D14	CH0026A
1026	K27	J200-A18	CH00271	J200-E14	CH0027A
1027	K28	J200-B 18	CH00281	J200-B 13	CH0028A
1028	K29	J200-E19	CH00291	J200-A13	CH0029A
1029	K30	J200-D19	CH00301	J200-C13	CH0030A
1030	K31	J200-E12	CH00311	J200-A10	CH0031A
1031	K32	J200-B11	CH00321	J200-B10	C110032A
1032	K33	J200-C12	CH00331	J200-C10	CH0033A

Table 3-2. Channel to Connector Pin-Out Mapping for SPST Relays (Continued)

Channel	Relay	Connector In	Schematic Channel	Connector Out	Schematic Channel
1033	K34	J200-D12	CH00341	J200-D10	CH0034A
1034	K35	J200-A12	CH00351	J200-E10	CH0035A
1035	K36	J200-B 12	CH00361	J200-E09	CH0036A
1036	K37	J200-A09	CH00371	J200-A08	CH0037A
1037	K38	J200-B08	CH00381	J200-B07	CH0038A
1038	K39	J200-C09	CH00391	J200-E07	CH0039A
1039	K40	J200-D08	CH00401	J200-D06	CH0040A
1040	K41	J200-D09	CH00411	J200-A07	CH0041A
1041	K42	J200-B09	CH00421	3200-B06	CH0042A
1042	K43	J200-D05	CH00431	J200-004	CH0043A
1043	K44	J200-E04	CH00441	J200-003	CH0044A
1044	K45	J200-A06	CH00451	J200-A04	CH0045A
1045	K46	J200-B05	CH00461	J200-B03	CH0046A
1046	K47	3200-C06	CH00471	3200-E03	CH0047A
1047	K48	J200-C05	CH00481	J200-D01	CH0048A

Table 3-3. Channel to Connector Pin-Out Mapping for 1x2 MUX Relays

Channel	Relay	Connector In	Schematic Channel	Connector Out	Schematic Channel
2000	K49	J202-15 (S)	CH0049I	J202-25 (CC)	CH0049A
2001	K50			J202-2 1(Y)	CH0049B
2100	K51	J202-32 (LL)	CH0050I	J202-33 (MM)	CH0050A
2101	K52			J202-29 (HH)	CH0050B
2200	K53	J202-28 (FF)	CH0051I	J202-14 (R)	CH0051A
2201	K54			J202-10 (L)	CH0051B
2300	KS5	J202-6 (F)	CH0052I	J202-24 (BB)	CH0052A
2301	KS6			J202-34 (NN)	CH0052B
2400	KS7	J202-30 (JJ)	CH0053I	J202-2 (B)	CH0053A
2401	KS8			J202-27 (EE)	CH0053B
2500	K59	J202-3 1 (KK)	CH0054I	J202-19 (W)	CH0054A
2501	K60			3202-23 (AA)	CH0054B

Table 3-4. Channel to Connector Pin-Out Mapping for 1x4 MUX Relays

3000	K61	J202-5 (E)	CH0055I	3202-18 (V)	CH0055A
3001	K62			3202-16 (T)	CH0055B
3002	K63			3202-7 (H)	CH005SC
3003	K64			J202-4 (D)	CH0055D
3100	K65	3202-9 (K)	CH0056I	J202-22 (Z)	CH0056A
3101	K66			3202-20 (X)	CH0056B
3102	K67			J202- 11(M)	CH0056C
3103	K68			J202-8 (3)	CH0056D
3200	K69	3202-1(A)	CH00571	3202-26 (DD)	CH00S7A
3201	K70			3202-13 (P)	CH0057B
3202	K71			3202-3 (C)	CH0057C
3203	K72			J202- 12 (N)	CH00S7D

Table 3-5. Channel to Connector Pin-Out Mapping for Matrix Relays

4000	K81			J200-D27	CH0068A
4001	K82			J200-E28	CH0068B
4002	K83			J200-E32	CH0068C
4003	K84			J200-E3 1	CH0068D
4004	K85	J200-D30	CH00681	J200-D32	CH0068E
4005	K86			J200-D3 1	CH0068F
4006	K87			J200-B27	CH0068G
4007	K88			J200-A27	CH0068H
4010	K89			J200-D27	CH0068A
4011	K90			J200-E28	CH0068B
4012	K91			J200-E32	CH0068C
4013	K92			J200-E3 1	CH0068D
4014	K93	J200-E30	CH01681	J200-D32	CH0068E
4015	K94			J200-D3 1	CH0068F
4016	K95			J200-B27	CH0068G
4017	K96			J200-A27	CH0068H
4100	K97			J200-C2 1	CH0069A
4101	K98			J200-A20	CH0069B
4102	K99			J200-A23	CH0069C
4103	K100	J200-A22	CH00691	J200-B24	CH0069D
4104	K101			J200-E24	CH0069E
4105	K102			J200-B25	CH0069F
4106	K103			J200-D2 1	CHOO69G
4107	K104			J200-C20	CH0069H
4110	K105			J200-C21	CH0069A
41~11	K106			J200-A20	CH0069B
4112	K107			J200-A23	CH0069C
4113	K108			J200-B24	CH0069D
4114	K109	J200-B22	CH01691	J200-E24	CH0069E
4115	K110			J200-B25	CH0069F
4116	K111			J200-D2 1	CH0069G
4117	K112			J200-C20	CH0069H

Table 3-5. Channel to Connector Pin-Out Mapping for Matrix Relays (Continued)

4200	K113	J200-D13	CH0070I	J200-C 11	CH0070A
4201	K114			J200-A 11	CH070B
4202	K115			J200-A 14	CH0070C
4203	K116			J200-B 14	CH0070D
4204	K117			J200-E 18	CH0070E
4205	K118			J200-E 17	CH0070F
4206	K119			J200-E 11	CH0070G
4207	K120			J200-D 12	CH0070H
4210	K121	J200-E13	CH0170I	J200-C 11	CH0070A
4211	K122			J200-A 11	CH0070B
4212	K123			J200-A 14	CH0070C
4213	K124			J200-B 14	CH0070D
4214	K125			J200-E 18	CH0070E
4215	K126			J200-E 17	CH0070F
4216	K127			J200-E 11	CH0070G
4217	K128			J200-D 11	CH0070H
4300	K129	J200-E06	J200-E06	J200-B04	CH0071A
4301	K130			J200-A0S	CH0071B
4302	K131			J200-C08	CH0071C
4303	K132			J200-C07	CH0071D
4304	K133			J200-E08	CH0071E
4305	K134			J200-D07	CH0071F
4306	K135			J200-D03	CH0071G
4307	K136			J200-D04	CH0071H
4310	K137	J200-E05	CH0171I	J200-B04	CH0071A
4311	K138			J200-A05	CH0071B
4312	K139			J200-C08	CH0071C
4313	K140			J200-C07	CH0071D
4314	K141			J200-E08	CH0071E
4315	K142			J200-D07	CH0071F
4316	K143			J200-D03	CH00710
4317	K144			J200-D04	CH0071H

Table 3-5. Channel to Connector Pin-Out Mapping for Matrix Relays (Continued)

4400	K145	J200-A01	CH00721	J200-C02	CH0072A
4401	K146			J200-E02	CH0072B
4402	K147			3200-E01	CH0072C
4403	K148			J200-B01	CH0072D
4404	K149			J200-A03	CH0072E
4405	K150			J200-C01	CH0072F
4406	K151			J200-B02	CH0072G
4407	K152			J200-A02	CH0072H
4410	K153	J200-D02	CH01721	J200-C02	CH0072A
4411	K154			J200-E02	CH0072B
4412	K155			J200-E01	CH0072C
4413	K156			J200-B01	CH0072D
4414	K157			J200-A03	CH0072E
4415	K158			J200-C01	CH0072F
4416	K159			J200-B02	CH0072G
4417	K160			J200-A02	CH0072H

Table 3-6, Grounds

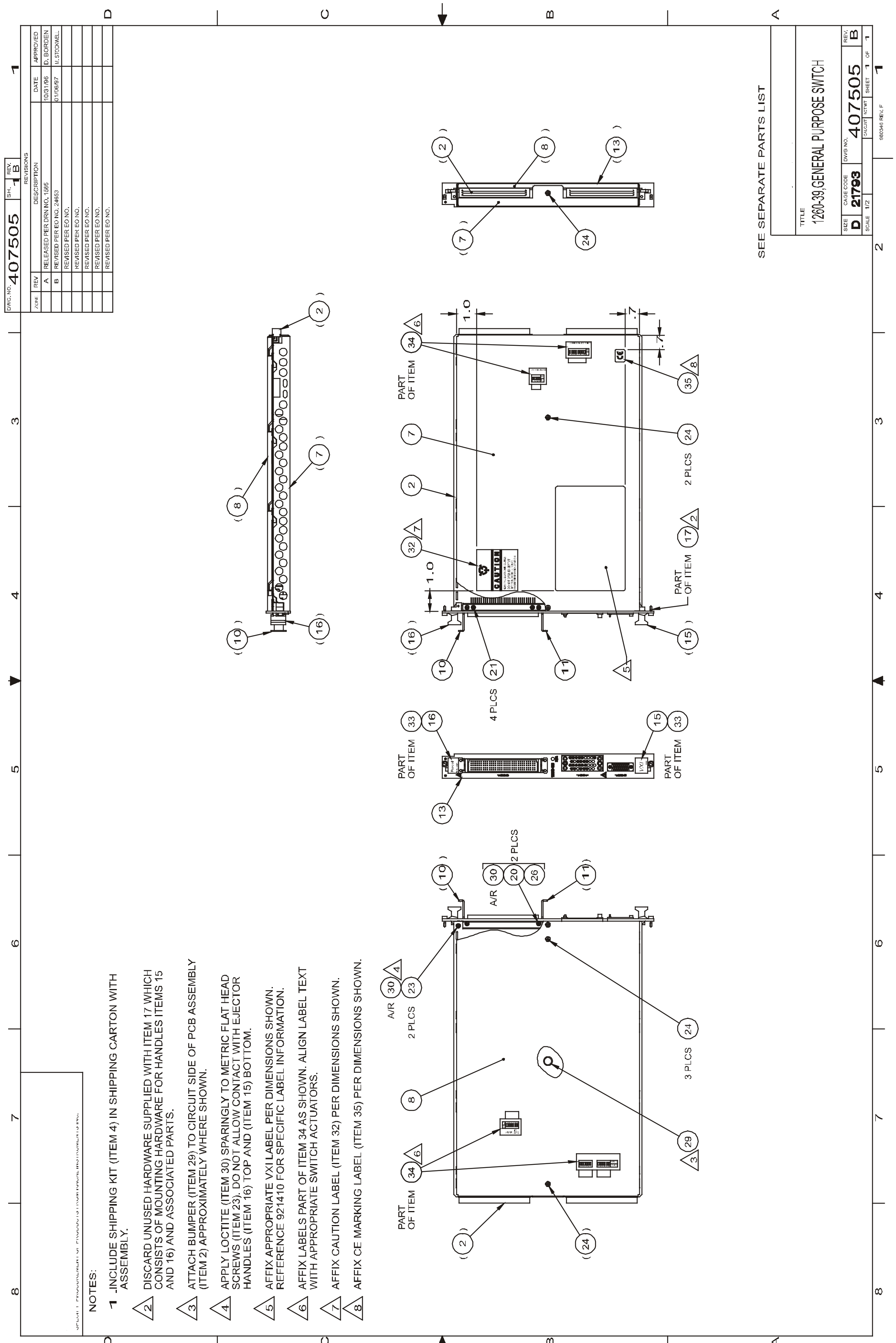
Grounds:	J200	A15,A16,A17,B15,B16,B17,C15,C16,C17 D15,D16,D17,E15,E16
	J201-19(W)	
	J202-17(U)	

Chapter 4

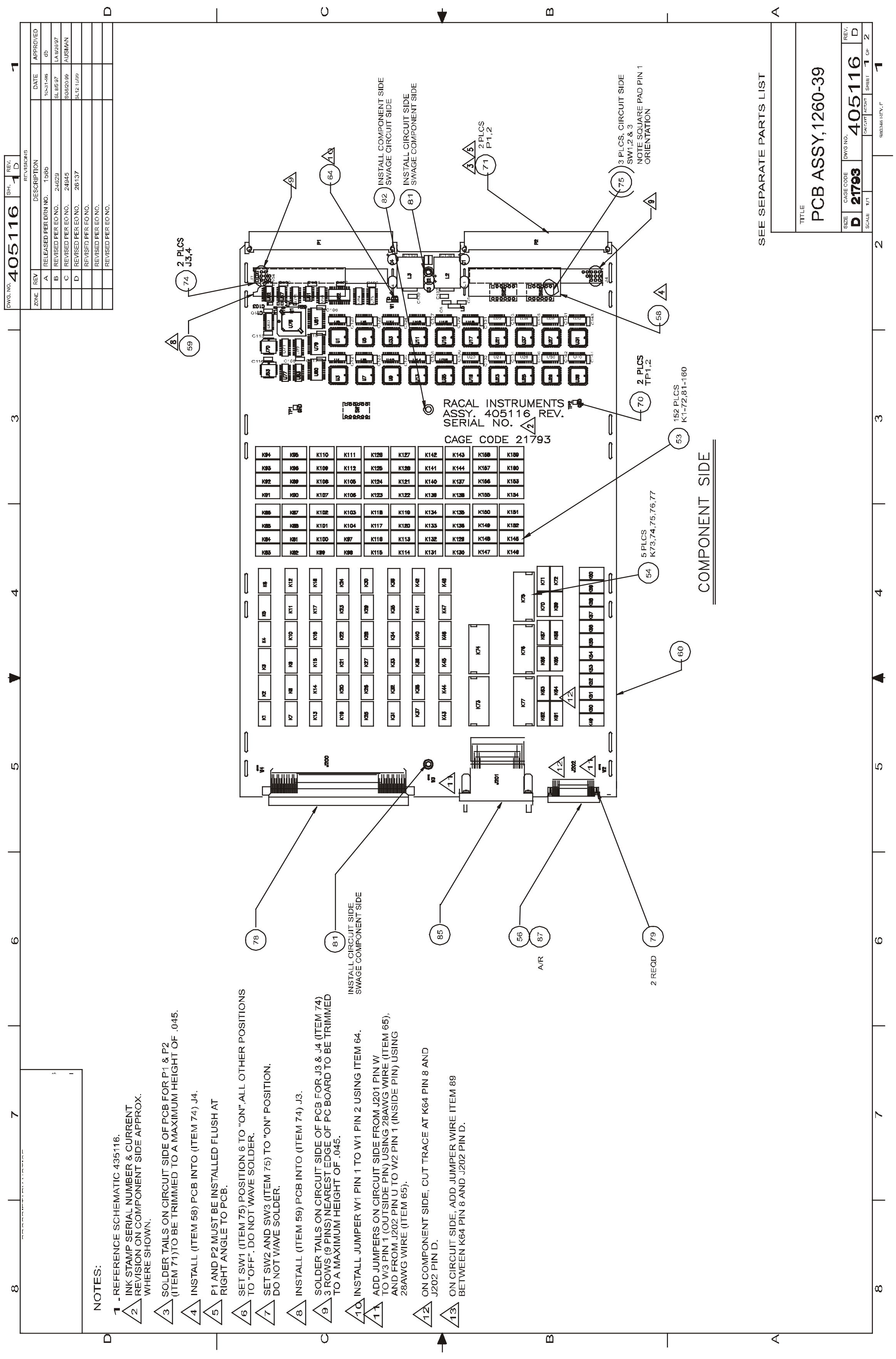
DRAWINGS

Note: *The drawings in this section can be used for illustrative and reference purposes but may not be the most current revisions. If the latest versions are important to you, please contact our Customer Service Department for assistance.*

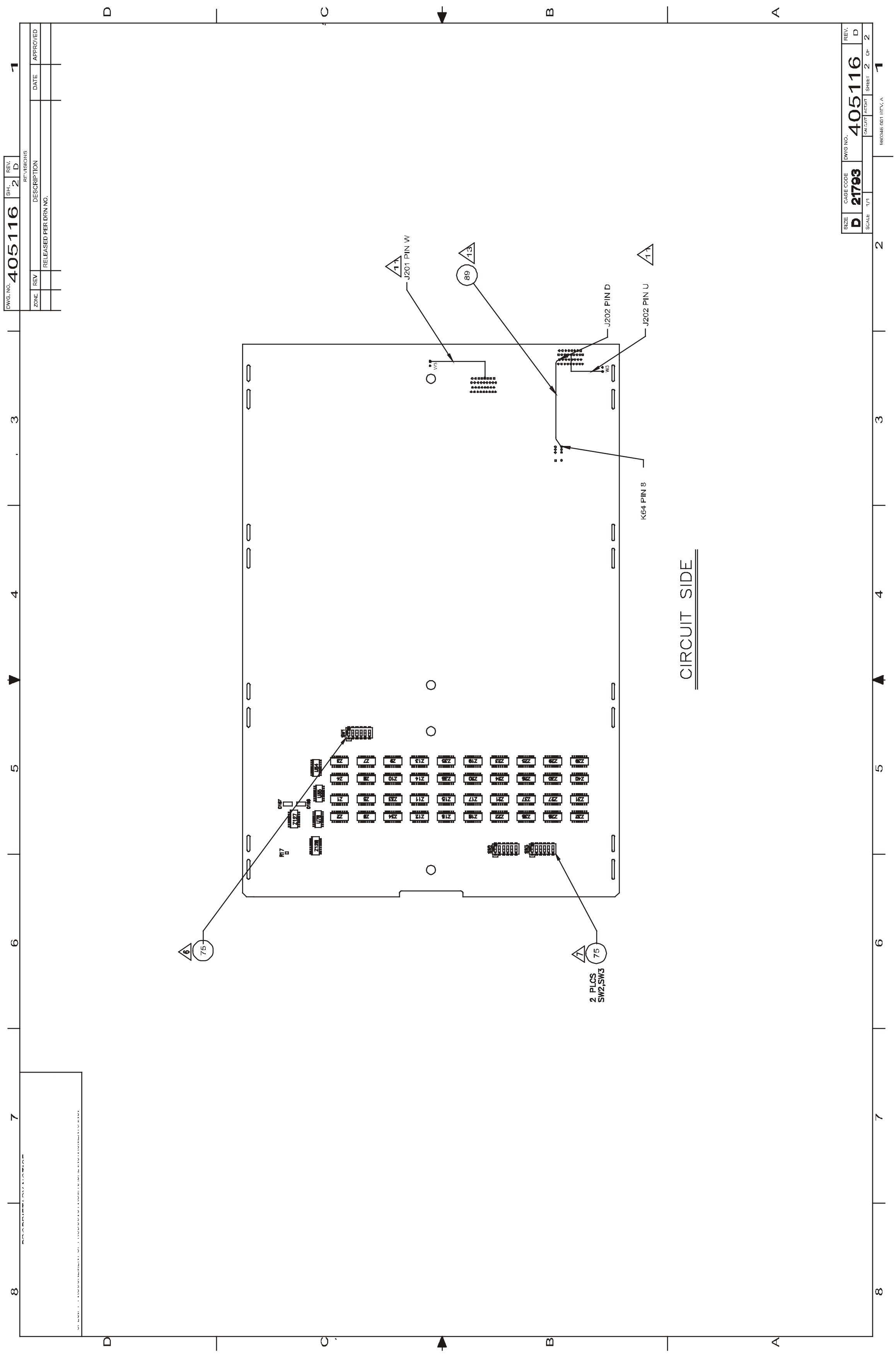
This page was left intentionally blank.



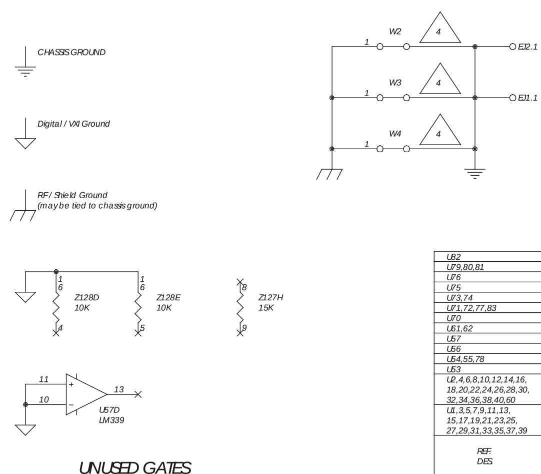
NOTES:
1 INCLUDE SHIPPING KIT (ITEM 4) IN SHIPPING CARTON WITH ASSEMBLY.
2 DISCARD UNUSED HARDWARE SUPPLIED WITH ITEM 17 WHICH CONSISTS OF MOUNTING HARDWARE FOR HANDLES ITEMS 15 AND 16) AND ASSOCIATED PARTS.
3 ATTACH BUMPER (ITEM 29) TO CIRCUIT SIDE OF PCB ASSEMBLY (ITEM 2) APPROXIMATELY WHERE SHOWN.
4 APPLY LOCTITE (ITEM 30) SPARINGLY TO METRIC FLAT HEAD SCREWS (ITEM 23). DO NOT ALLOW CONTACT WITH EJECTOR HANDLES (ITEM 16) TOP AND (ITEM 15) BOTTOM.
5 AFFIX APPROPRIATE VXI LABEL PER DIMENSIONS SHOWN. REFERENCE 921410 FOR SPECIFIC LABEL INFORMATION.
6 AFFIX LABELS PART OF ITEM 34 AS SHOWN. ALIGN LABEL TEXT WITH APPROPRIATE SWITCH ACTUATORS.
7 AFFIX CAUTION LABEL (ITEM 32) PER DIMENSIONS SHOWN.
8 AFFIX CE MARKING LABEL (ITEM 35) PER DIMENSIONS SHOWN.
SEE SEPARATE PARTS LIST
TITLE 1260-39,GENERAL PURPOSE SWITCH
SIZE D CAGE CODE 21793 DWG NO. 407505 REV. B
SCALE 1/2 SHEET 1 OF 1
DWG. NO. 407505 SH. 1 REV. B
REVISIONS
A RELEASED PER DRN NO. 1065 10/31/96 D. BORDEN
B REVISED PER EO NO. 24653 01/06/97
PART OF ITEM
2 PLCS
4 PLCS
3 PLCS
A/R
CAUTION



PCB ASSY,1260-39
DWG NO. 405116
SIZE D
CAGE CODE 21793
SEE SEPARATE PARTS LIST
COMPONENT SIDE
RACAL INSTRUMENTS
ASSY. 405116 REV.
SERIAL NO.
CAGE CODE 21793
REVISIONS
A RELEASED PER DRN NO. 1586
B REVISED PER EO NO. 24629
C REVISED PER EO NO. 24945
D REVISED PER EO NO. 26137
INSTALL COMPONENT SIDE SWAGE CIRCUIT SIDE
INSTALL CIRCUIT SIDE SWAGE COMPONENT SIDE
2 PLCS P1,2
3 PLCS, CIRCUIT SIDE SW1,2 & 3 NOTE SQUARE PAD PIN 1 ORIENTATION
2 PLCS J3,4
2 PLCS TP1,2
152 PLCS K1-72,81-160
5 PLCS K73,74,75,76,77
2 REQD
A/R
NOTES:
1. REFERENCE SCHEMATIC 435116.
2. INK STAMP SERIAL NUMBER & CURRENT REVISION ON COMPONENT SIDE APPROX. WHERE SHOWN.
3. SOLDER TAILS ON CIRCUIT SIDE OF PCB FOR P1 & P2 (ITEM 71)TO BE TRIMMED TO A MAXIMUM HEIGHT OF .045.
4. INSTALL (ITEM 58) PCB INTO (ITEM 74) J4.
5. P1 AND P2 MUST BE INSTALLED FLUSH AT RIGHT ANGLE TO PCB.
6. SET SW1 (ITEM 75) POSITION 6 TO "ON".ALL OTHER POSITIONS TO "OFF". DO NOT WAVE SOLDER.
7. SET SW2 AND SW3 (ITEM 75) TO "ON" POSITION. DO NOT WAVE SOLDER.
8. INSTALL (ITEM 59) PCB INTO (ITEM 74) J3.
9. SOLDER TAILS ON CIRCUIT SIDE OF PCB FOR J3 & J4 (ITEM 74) 3 ROWS (9 PINS) NEAREST EDGE OF PC BOARD TO BE TRIMMED TO A MAXIMUM HEIGHT OF .045.
10. INSTALL JUMPER W1 PIN 1 TO W1 PIN 2 USING ITEM 64.
11. ADD JUMPERS ON CIRCUIT SIDE FROM J201 PIN W TO W3 PIN 1 (OUTSIDE PIN) USING 28AWG WIRE (ITEM 65), AND FROM J202 PIN U TO W2 PIN 1 (INSIDE PIN) USING 28AWG WIRE (ITEM 65).
12. ON COMPONENT SIDE, CUT TRACE AT K64 PIN 8 AND J202 PIN D.
13. ON CIRCUIT SIDE, ADD JUMPER WIRE ITEM 89 BETWEEN K64 PIN 8 AND J202 PIN D.


CIRCUIT SIDE
J201 PIN W
J202 PIN D
J202 PIN U
K64 PIN 8
2 PLCS
SW2,SW3
DWG NO.
405116
REVISIONS
DESCRIPTION
RELEASED PER DRN NO.
CAGE CODE
21793
SIZE
D

1. CAPACITOR VALUES ARE IN MICROFARADS, 50V, +/-20% UNLESS OTHERWISE SPECIFIED.
2. RESISTOR VALUES ARE IN OHMS, 1/16W, +/-5% UNLESS OTHERWISE SPECIFIED.
3. RESISTOR NETWORK VALUES ARE IN OHMS, +/-2%.
4. PARTS INDICATED ARE NOT INSTALLED.
5. RELAYS K1-K72 AND K81-K160 ARE RACAL INSTRUMENTS P/N 310256.



CAD CURRENT REV. LTR
FOR SHEETS 1 THRU 25.
REVISION A.

CAD FILENAMES

| LINK
| SHEET2.SCH
| SHEET3.SCH
| SHEET4.SCH
| SHEET5.SCH
| SHEET6.SCH
| SHEET7.SCH
| SHEET8.SCH
| SHEET9.SCH
| SHEET10.SCH
| SHEET11.SCH
| SHEET12.SCH
| SHEET13.SCH
| SHEET14.SCH
| SHEET15.SCH
| SHEET16.SCH
| SHEET17.SCH
| SHEET18.SCH
| SHEET19.SCH
| SHEET20.SCH
| SHEET21.SCH
| SHEET22.SCH
| SHEET23.SCH
| SHEET24.SCH
| SHEET25.SCH

DRAWN WITH ORCAD 4.10

HIGHEST REF DES
Z128
W4
U83
TP2
SW3
R20
Q1
P2
L5
K152
J201
E32
C167

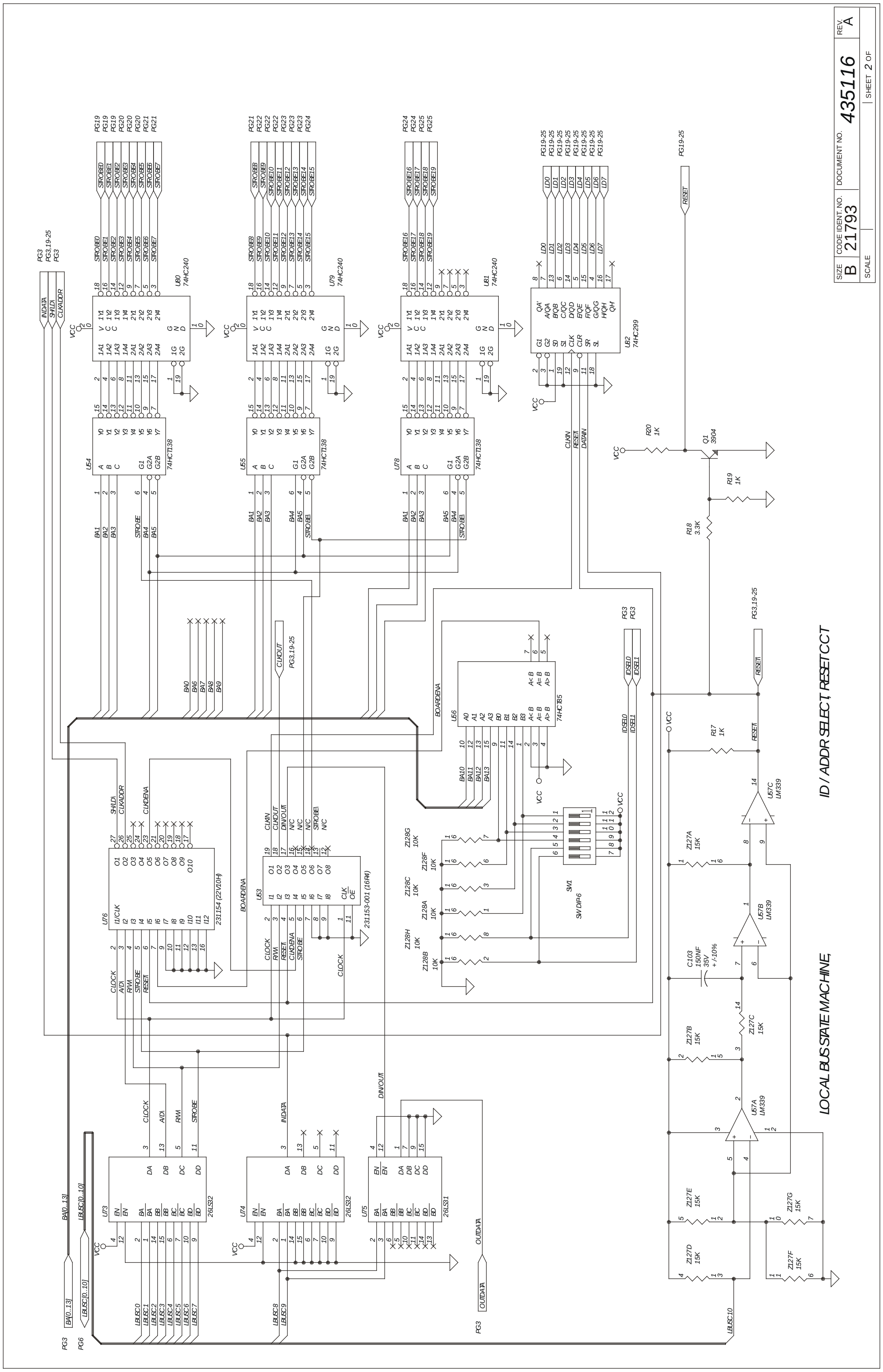
IC POWER CONNECTIONS

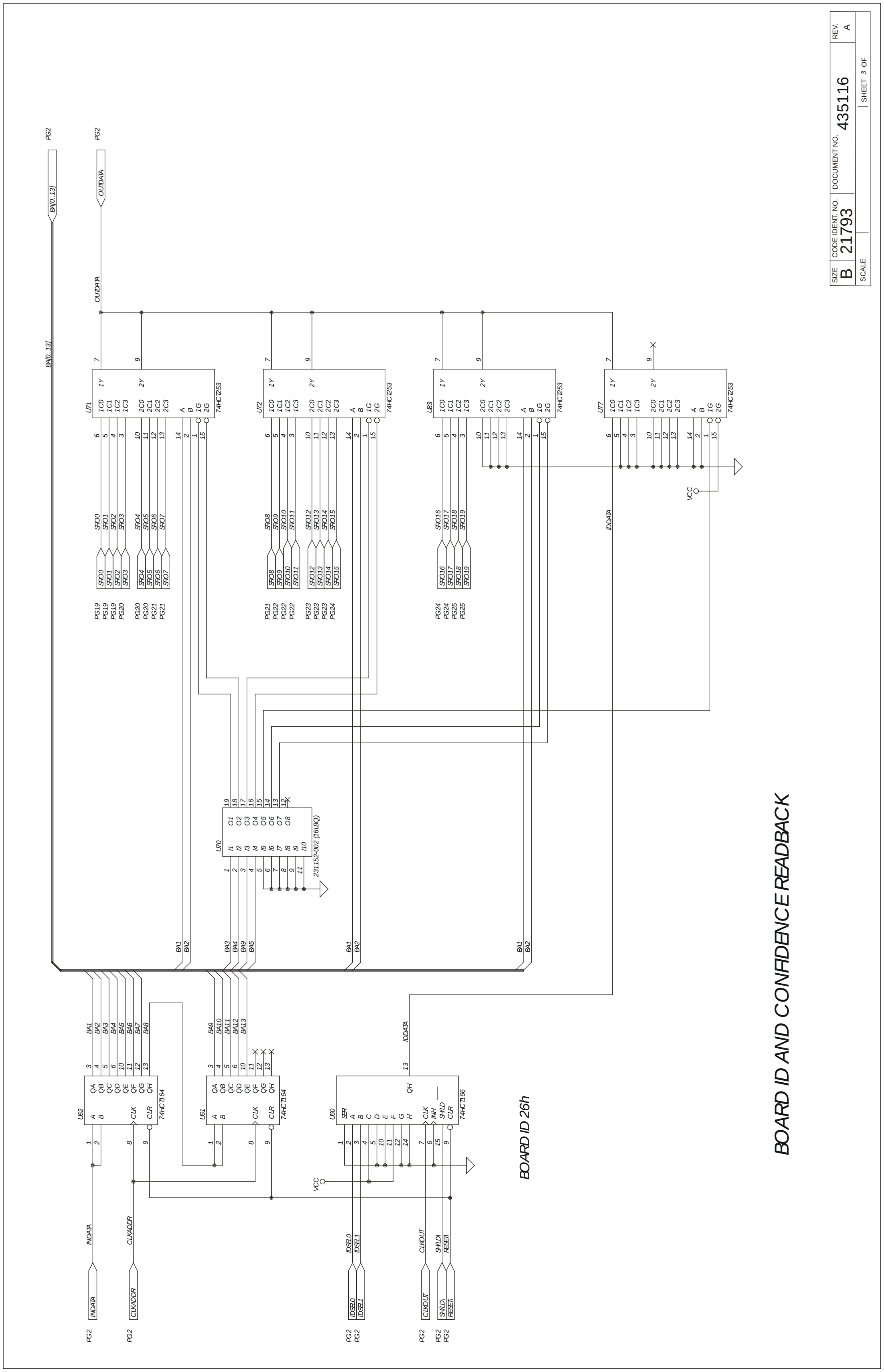
REF. DES	IC TYPE	+5V PIN NO.	VRR PIN NO.	GND PIN NO.
U82	74HC299	20		10
U79,80,81	74HC240	20		10
U76	231154(22V10H)	28		14
U75	26LS31	16		8
U73,74	26LS32	16		8
U71,72,77,83	74HCT253	16		8
U70	231152-002(16L8Q)	20		10
U61,62	74HCT164	14		7
U57	LM339	3		12
U56	74HCT85	16		8
U54,55,78	74HCT138	16		8
U53	231153-001(16R4)	20		10
U2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,60	74HCT166	16		8
U1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39	5801BV	27	15	16,17

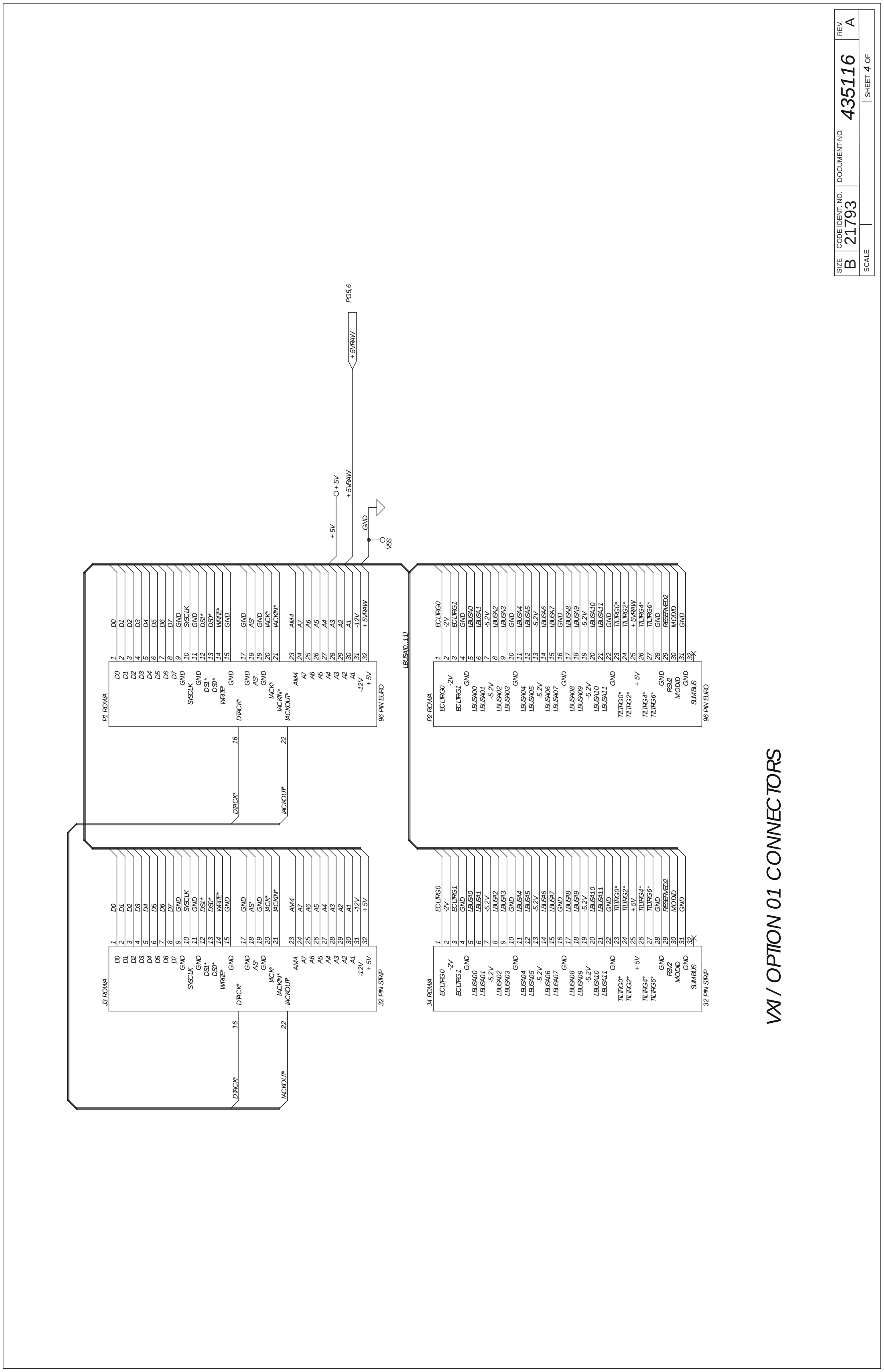
PROPRIETARY NOTICE

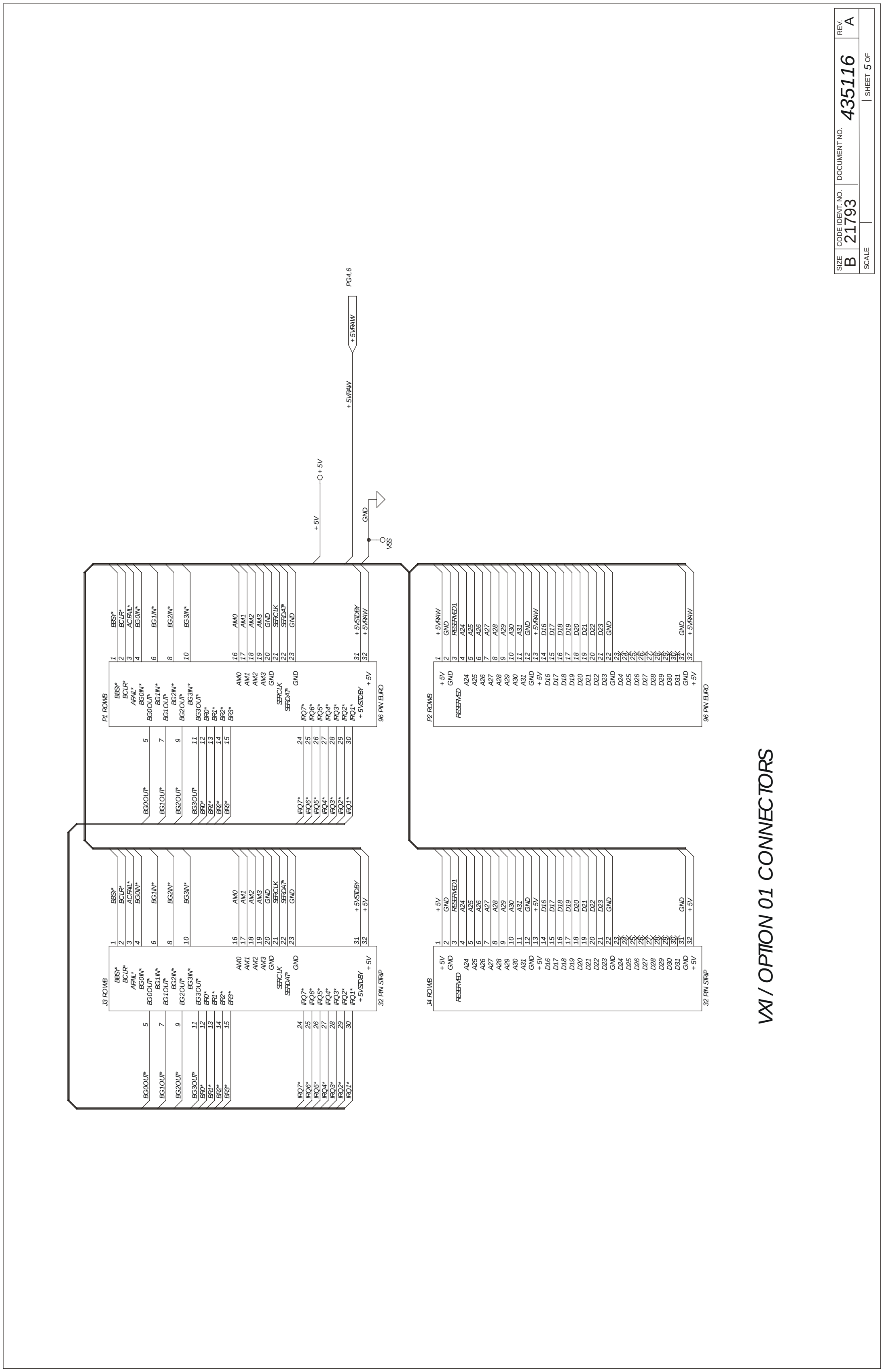
THIS DOCUMENT AND THE TECHNICAL DATA HEREIN DISCLOSED ARE PROPRIETARY TO RACAL INSTRUMENTS INC. AND SHALL NOT, WITHOUT THE EXPRESS WRITTEN PERMISSION OF RACAL INSTRUMENTS INC. BE USED, RELEASED OR DISCLOSED IN WHOLE OR IN PART, OR USED TO SOLICIT QUOTATIONS FROM A COMPETITIVE SOURCE OR USED FOR MANUFACTURE BY ANYONE OTHER THAN RACAL INSTRUMENTS INC. THE INFORMATION HEREON HAS BEEN DEVELOPED AT PRIVATE EXPENSE, AND MAY ONLY BE USED FOR PURPOSES OF ENGINEERING EVALUATION AND FOR INCORPORATION INTO TECHNICAL SPECIFICATIONS AND OTHER DOCUMENTS WHICH SPECIFY PROCUREMENT OF PRODUCTS FROM RACAL INSTRUMENTS INC.

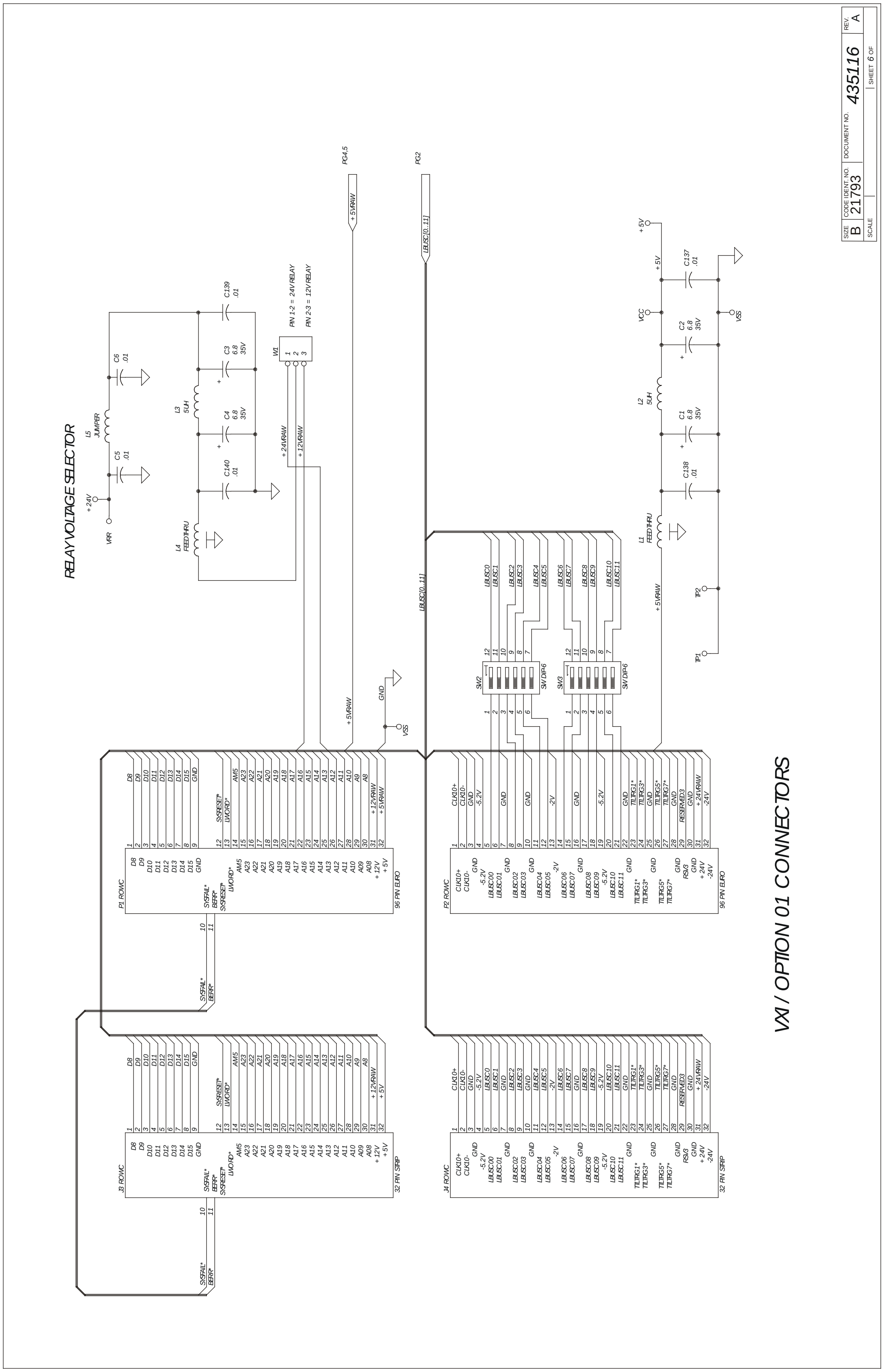
TITLE			
SCHEM.,1260-39			
SIZE D	CODE IDENT. NO. 21793	DOCUMENT NO. 435116	REV. A
SCALE		SHEET 1 OF 25	

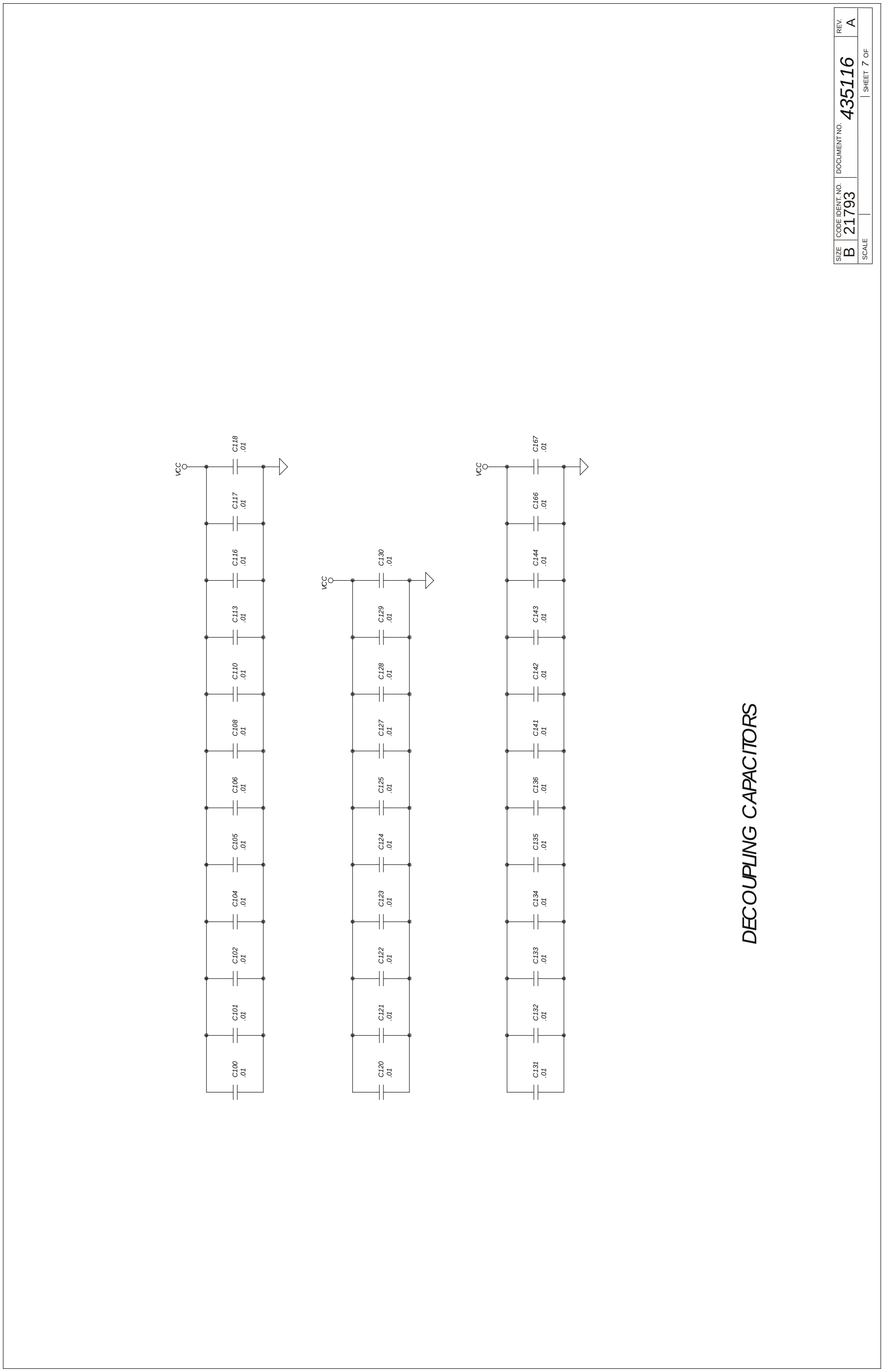

ID / ADDR SELECT, RESET CCT
LOCAL BUS STATE MACHINE
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435116
REV A
SHEET 2 OF
SCALE

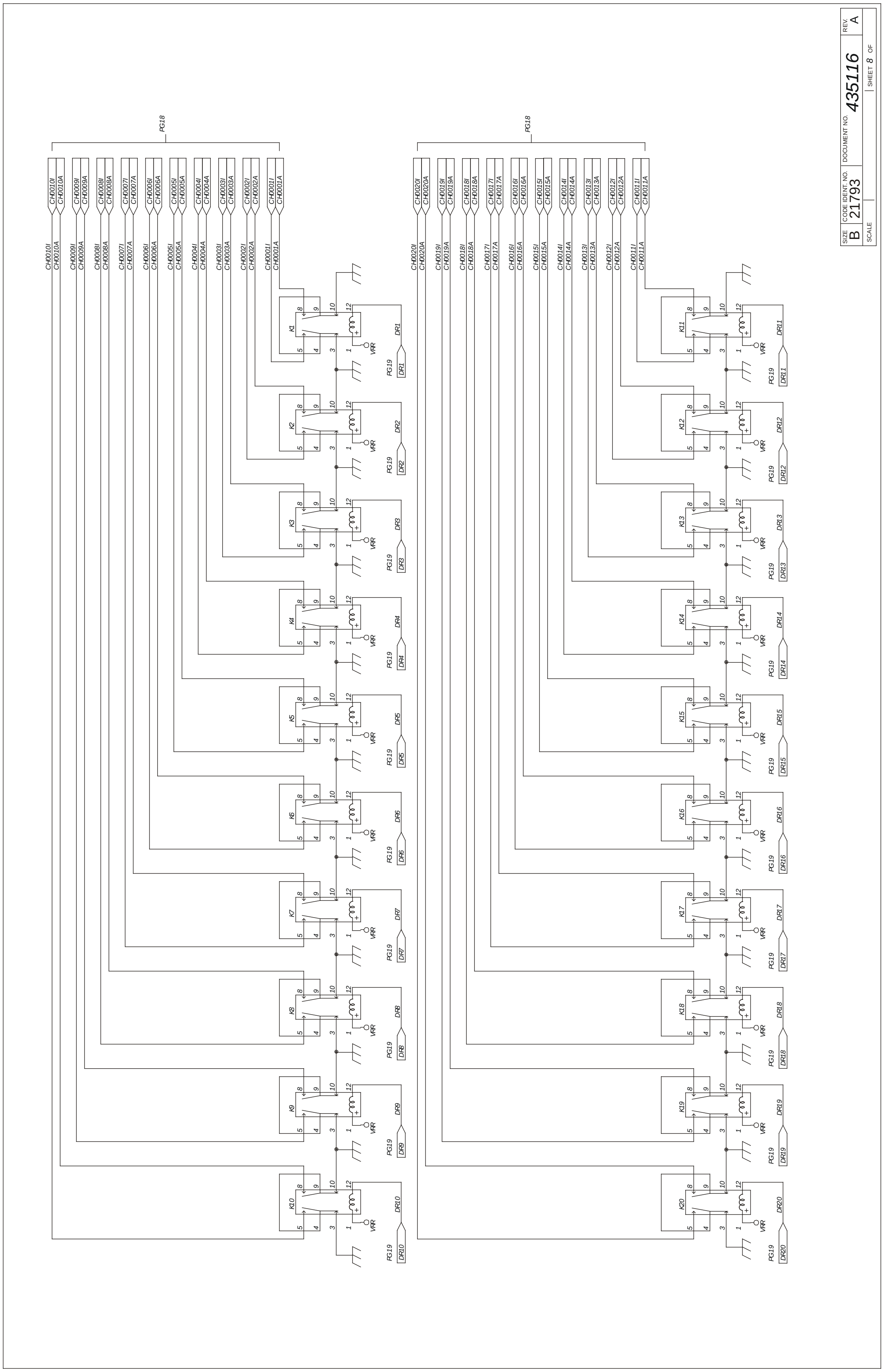

BOARD ID AND CONFIDENCE READBACK
BOARD ID 26h
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435116
REV. A
SCALE
SHEET 3 OF

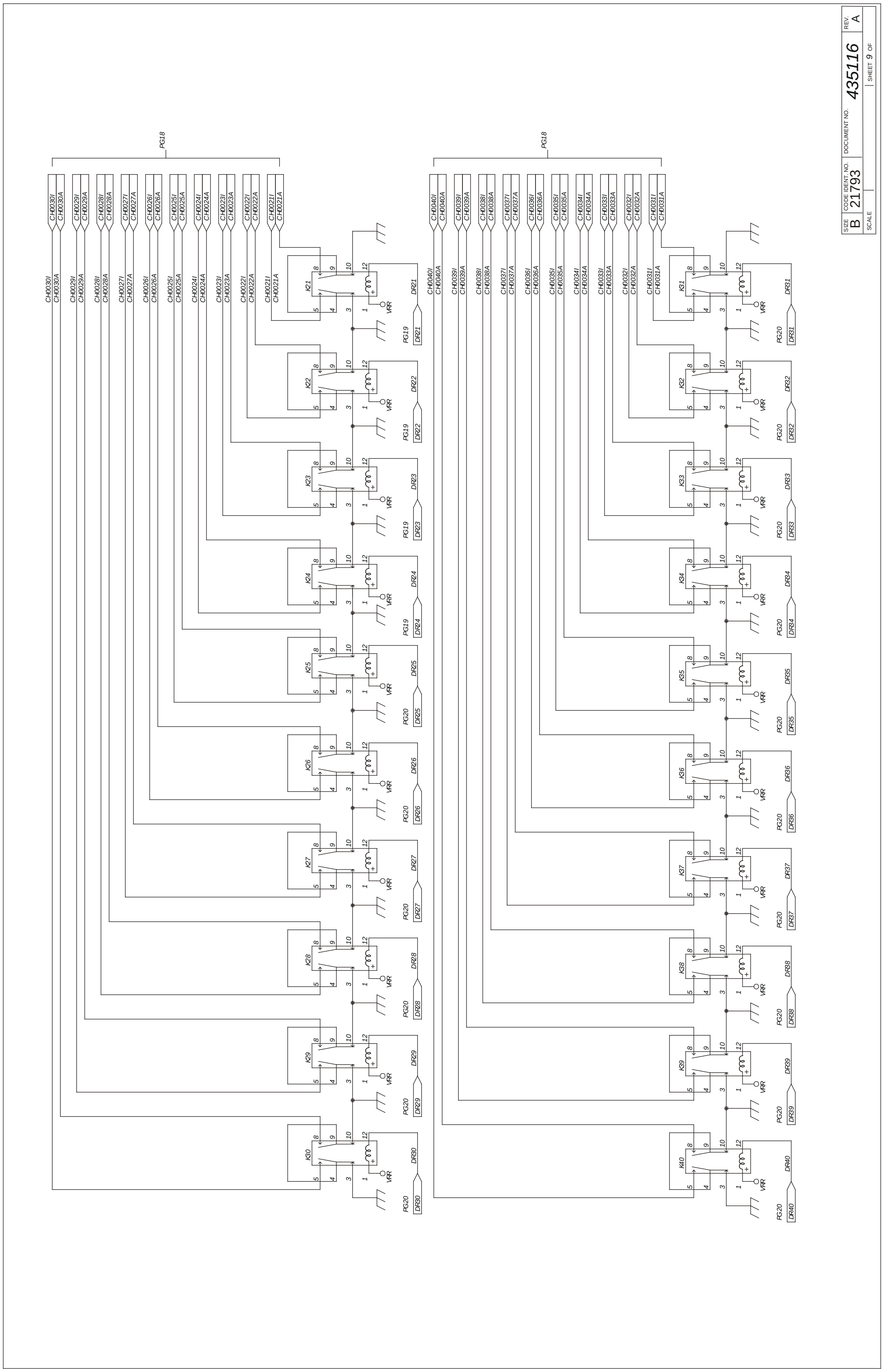

VXI / OPTION 01 CONNECTORS
P1 ROWA
96 PIN EURO
P2 ROWA
96 PIN EURO
J3 ROWA
32 PIN STRIP
J4 ROWA
32 PIN STRIP
+5VRAW
PG5,6
+5V
GND
VSS
DTACK*
IACKOUT*
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 4 OF

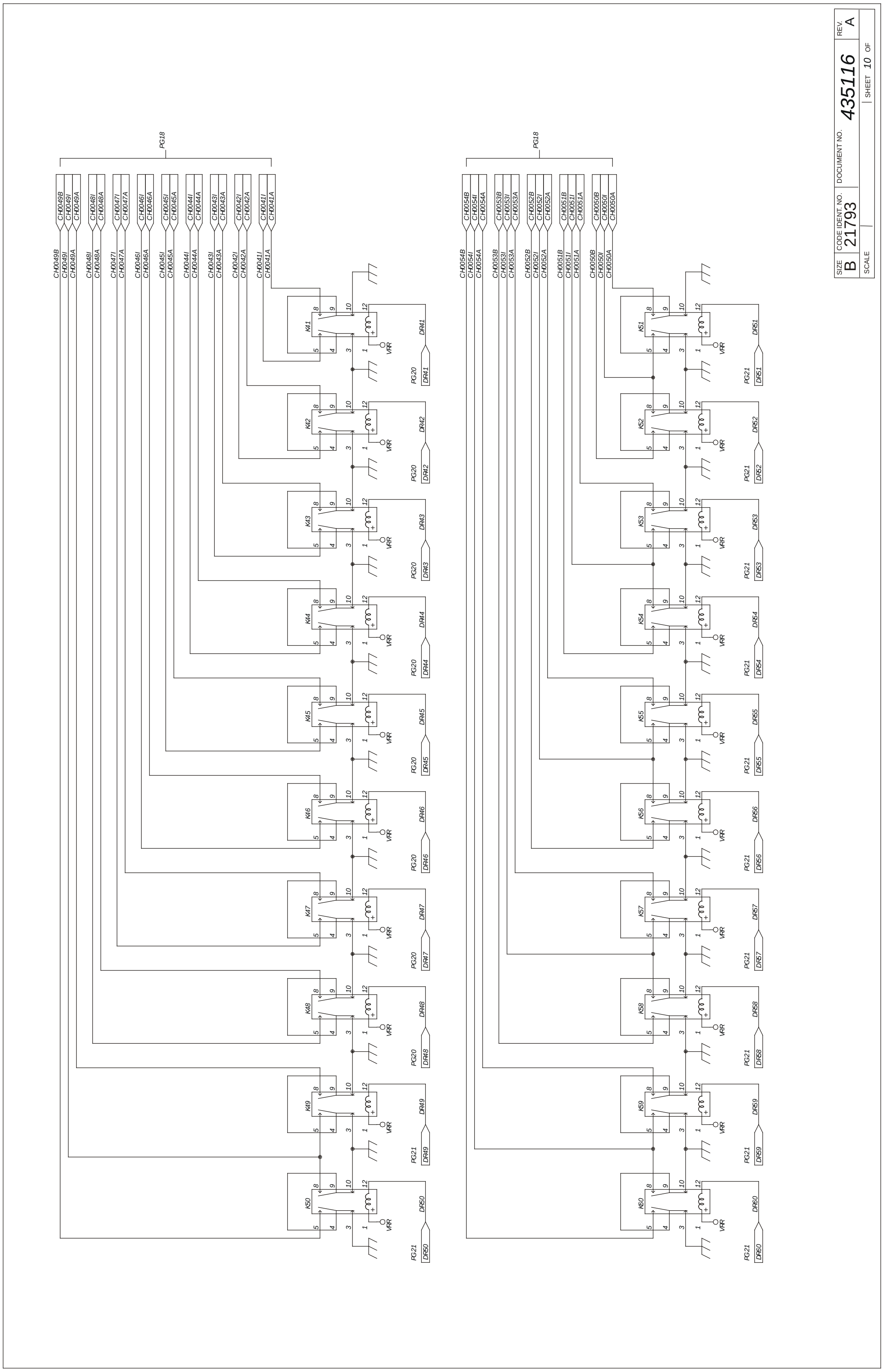

VXI / OPTION 01 CONNECTORS
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 5 OF

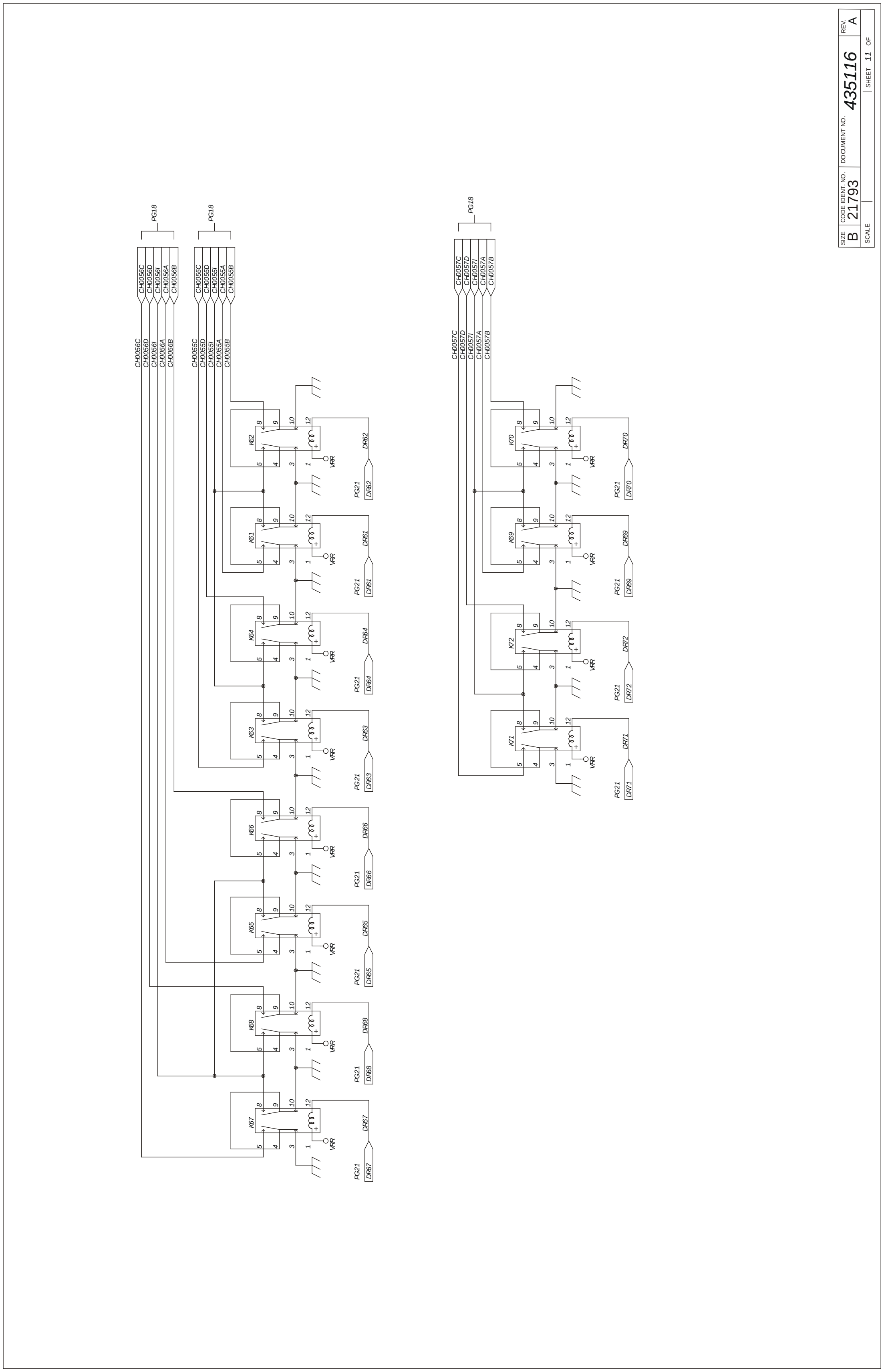

VXI / OPTION 01 CONNECTORS
RELAY VOLTAGE SELECTOR
PIN 1-2 = 24V RELAY
PIN 2-3 = 12V RELAY
P1 ROWC
P2 ROWC
J3 ROWC
J4 ROWC
96 PIN EURO
32 PIN STRIP
SW DIP6
SIZE B
CODE IDENT. NO. 21793
DOCUMENT NO. 435116
REV. A
SHEET 6 OF
SCALE

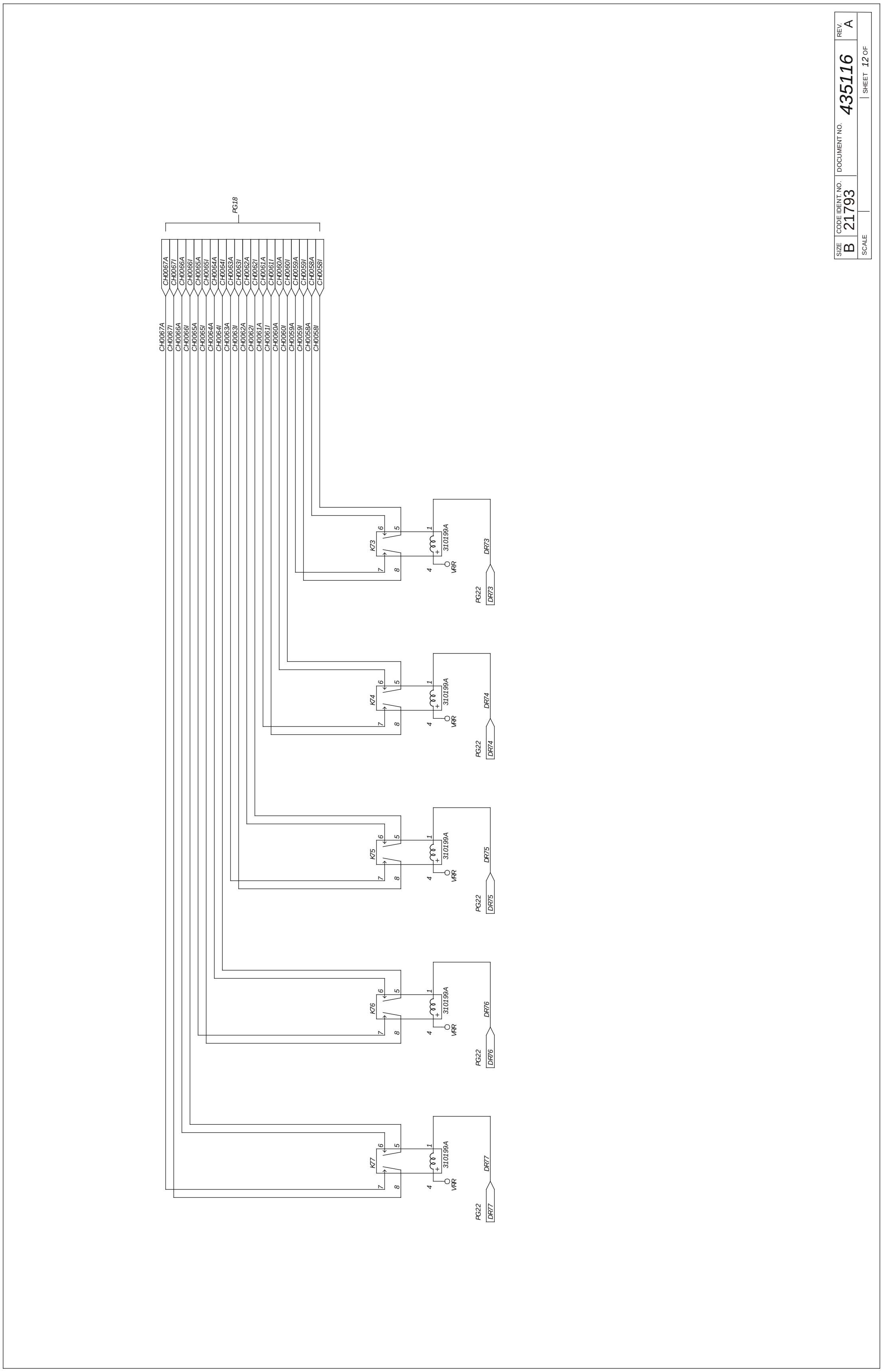

DECOUPLING CAPACITORS
VCC
C118 .01
C117 .01
C116 .01
C113 .01
C110 .01
C108 .01
C106 .01
C105 .01
C104 .01
C102 .01
C101 .01
C100 .01
C130 .01
C129 .01
C128 .01
C127 .01
C125 .01
C124 .01
C123 .01
C122 .01
C121 .01
C120 .01
C167 .01
C166 .01
C144 .01
C143 .01
C142 .01
C141 .01
C136 .01
C135 .01
C134 .01
C133 .01
C132 .01
C131 .01
SIZE B
CODE IDENT. NO. 21793
DOCUMENT NO. 435116
REV. A
SCALE
SHEET 7 OF

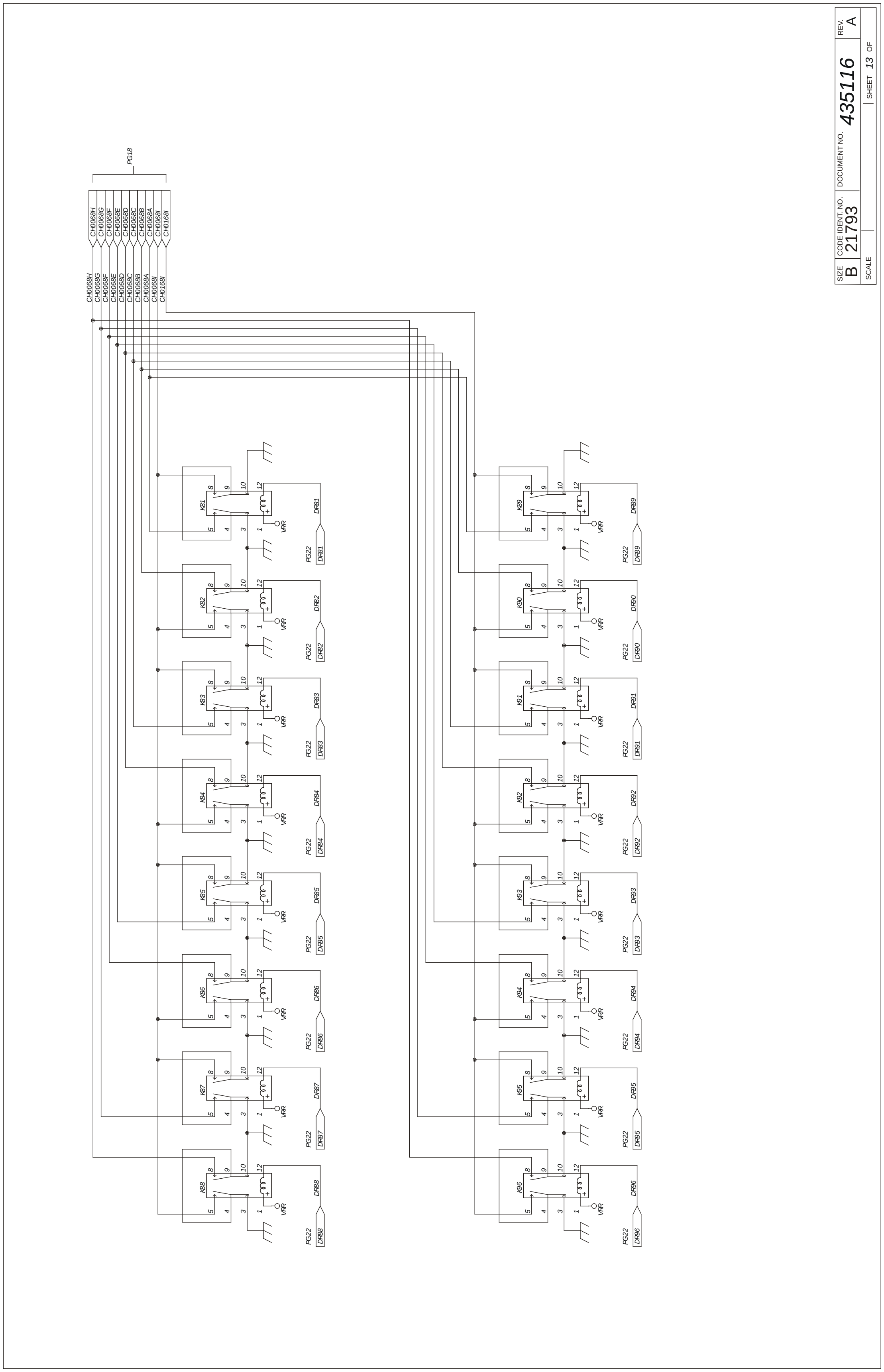

PG18
PG19
SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435116
REV.
A
SHEET 8 OF
SCALE

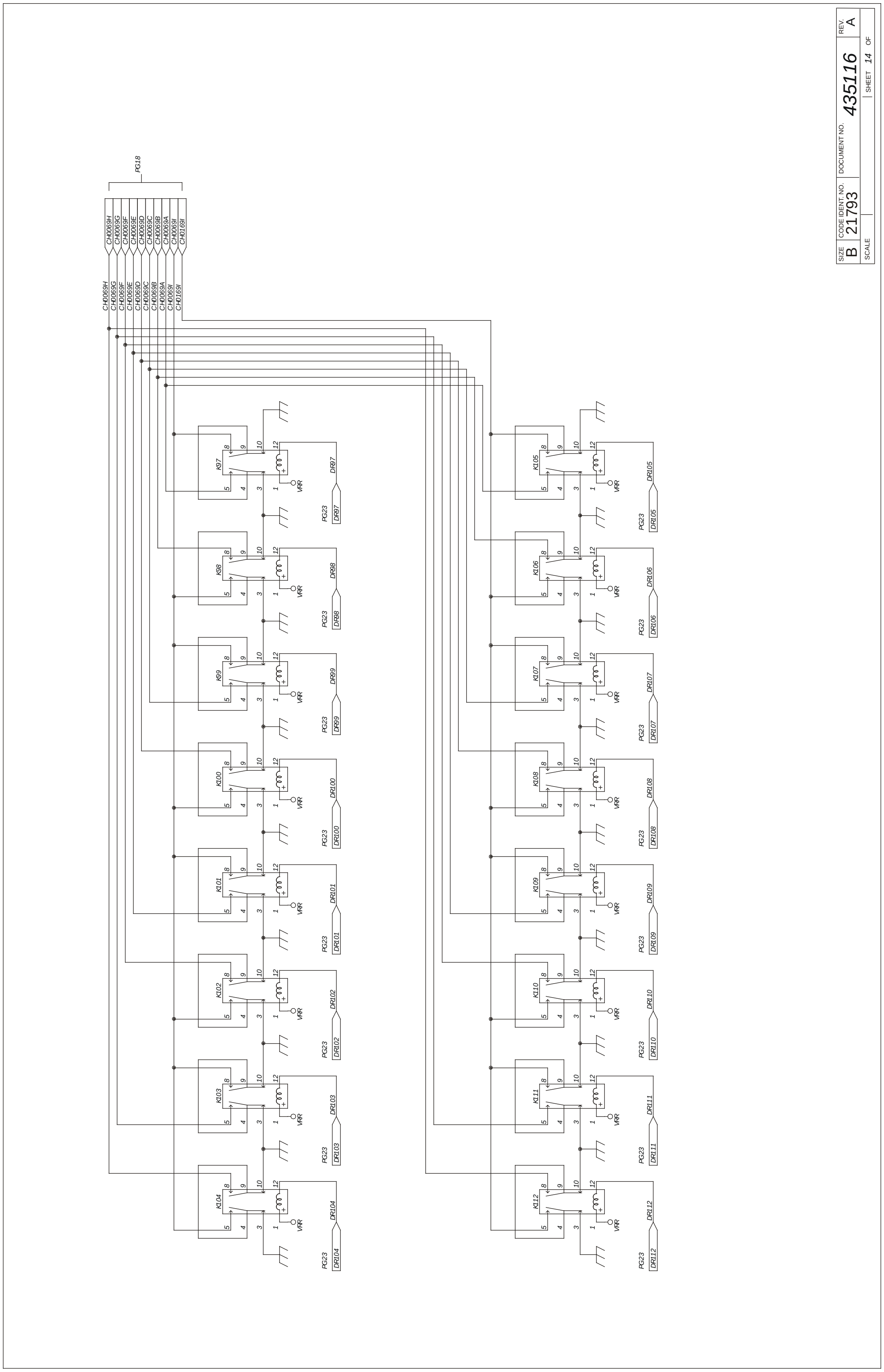


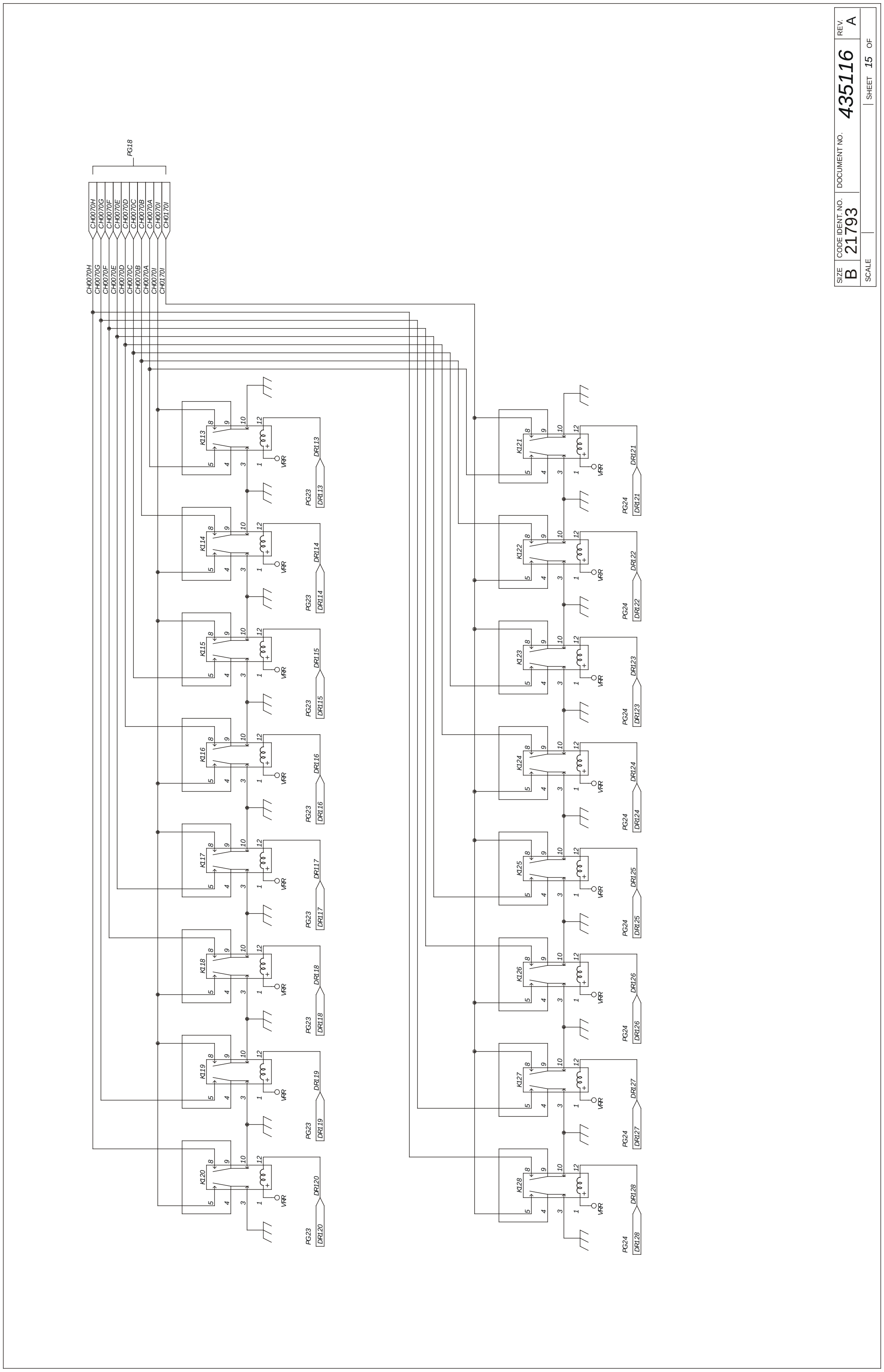

SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435116
REV. A
SHEET 10 OF
SCALE

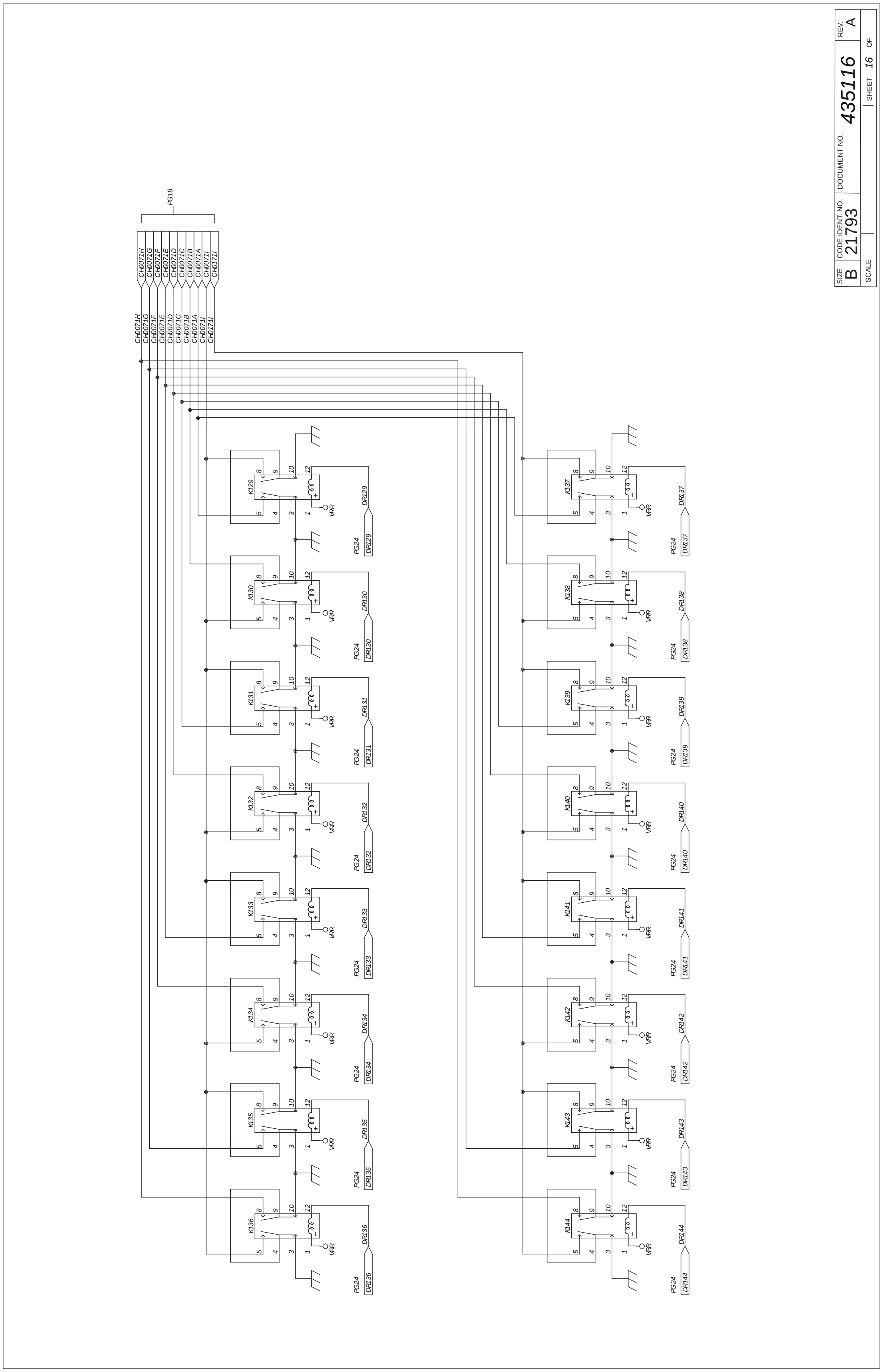

SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 11 OF

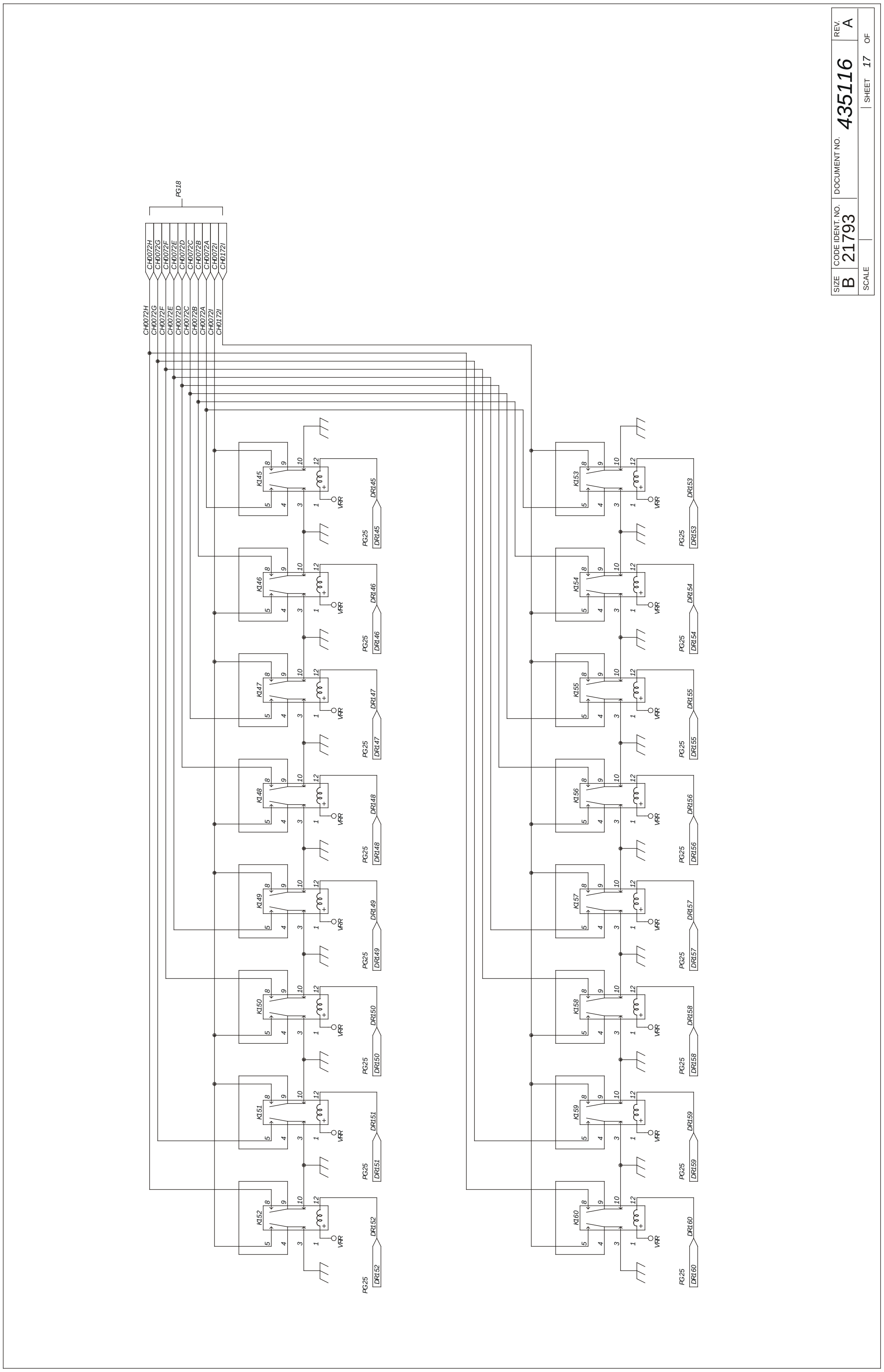

SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 12 OF
PG18
K73
K74
K75
K76
K77
310199A
DR73
DR74
DR75
DR76
DR77
PG22
VRR


SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 13 OF
PG18
CH0068H
CH0068G
CH0068F
CH0068E
CH0068D
CH0068C
CH0068B
CH0068A
CH0068I
CH0168I
K81
K82
K83
K84
K85
K86
K87
K88
K89
K90
K91
K92
K93
K94
K95
K96
VRR
PG22
DR81
DR82
DR83
DR84
DR85
DR86
DR87
DR88
DR89
DR90
DR91
DR92
DR93
DR94
DR95
DR96

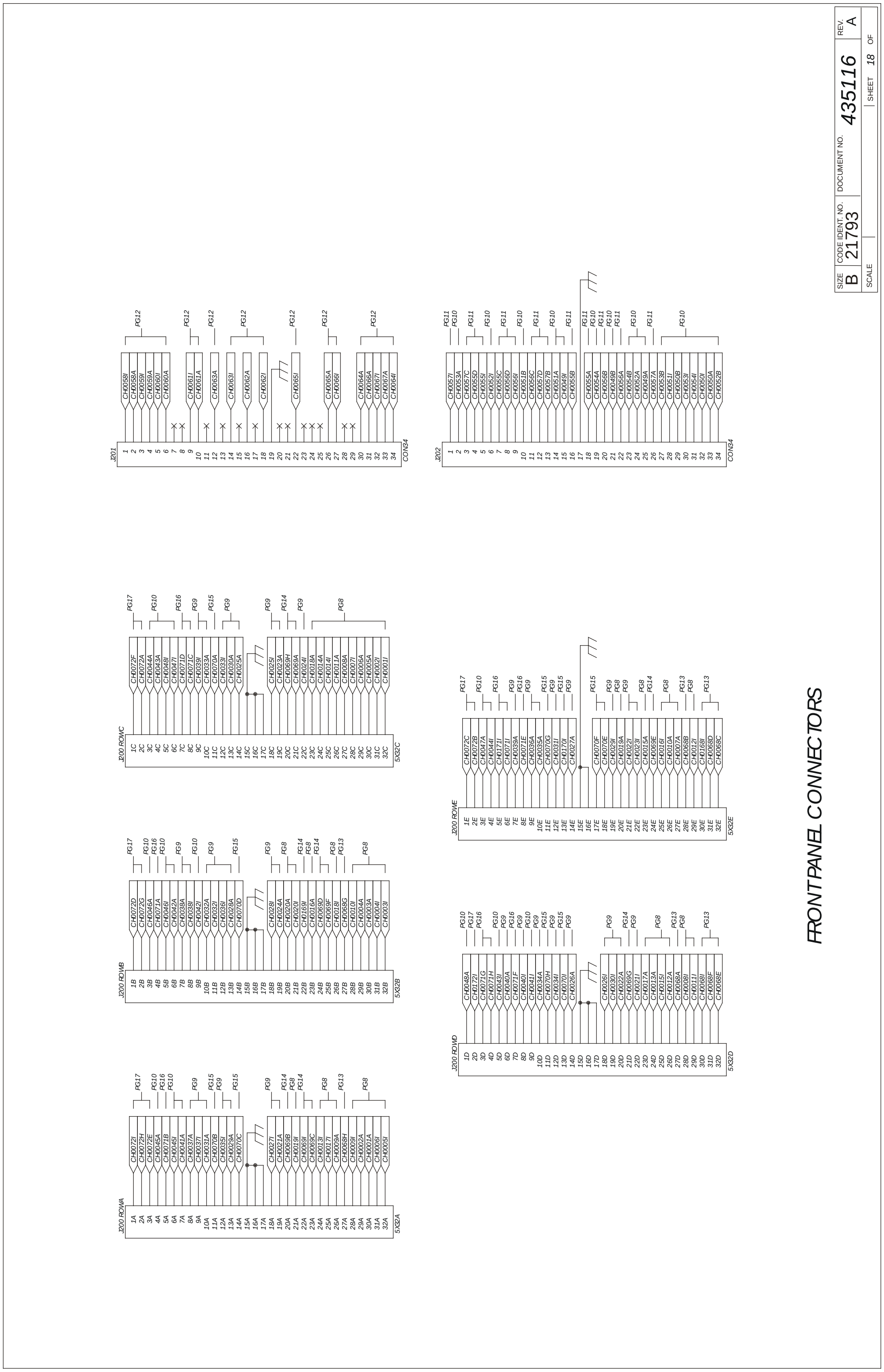

PG18
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 14 OF

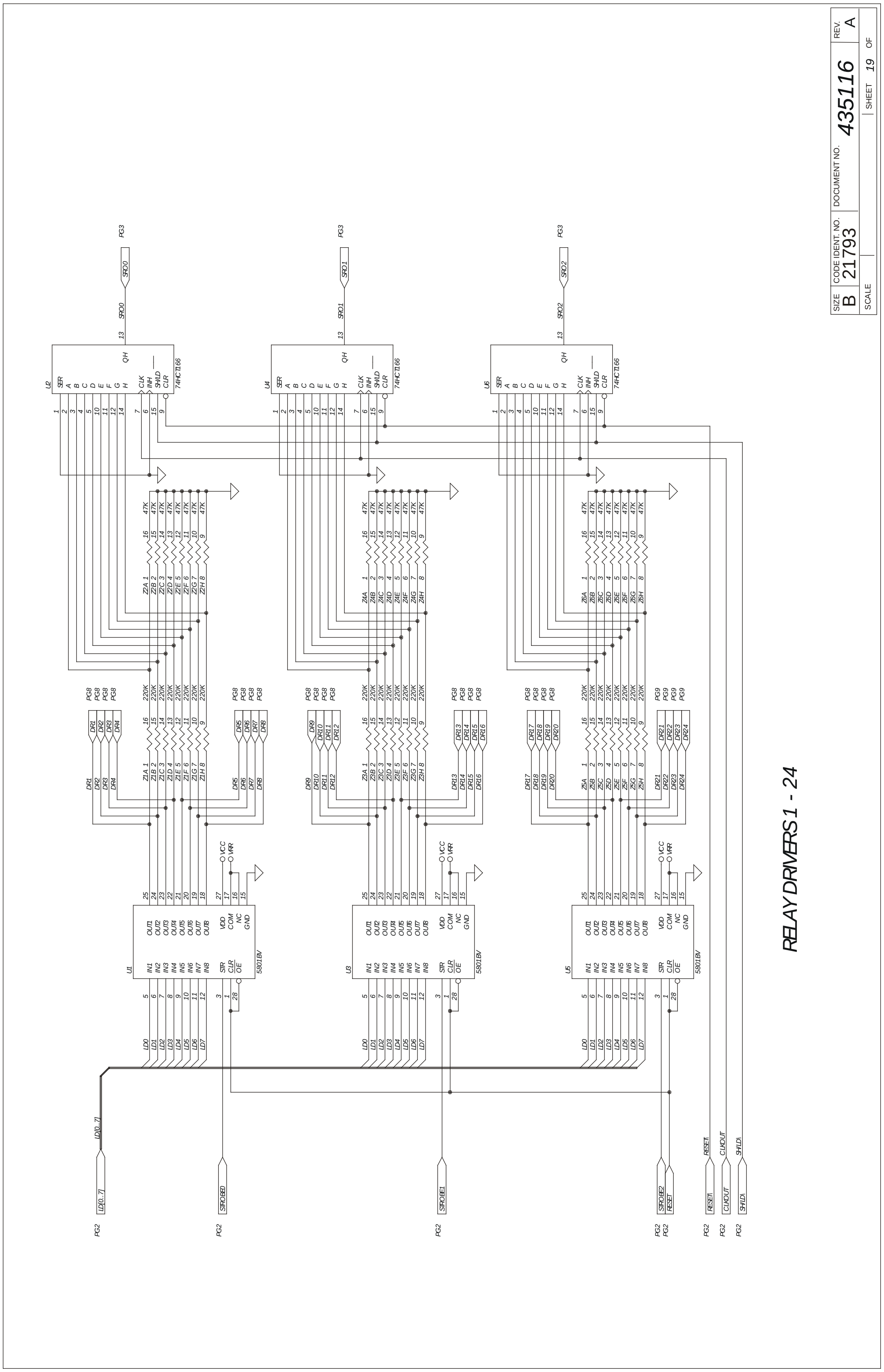

SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 15 OF

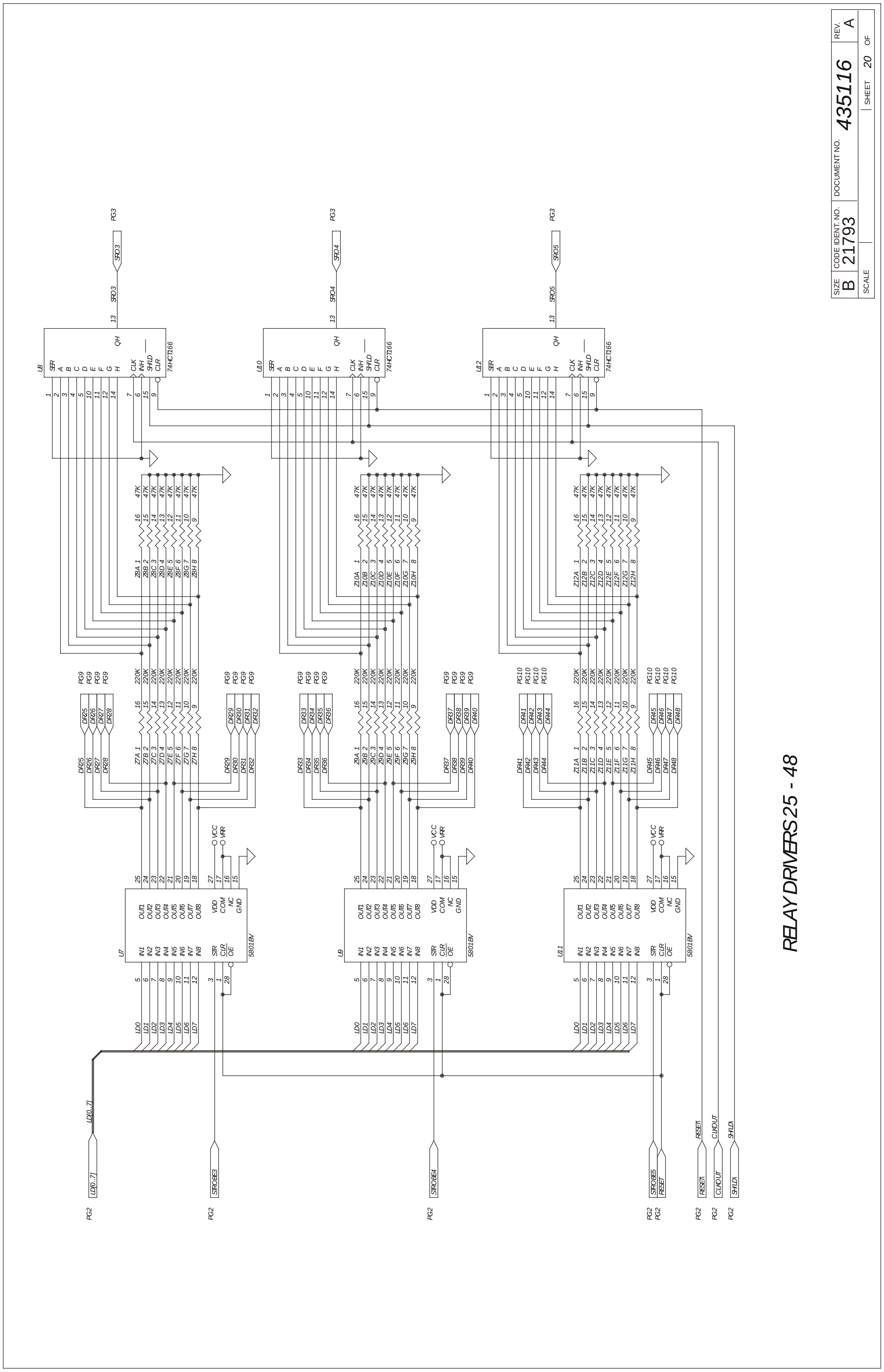

SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 16 OF
PG18
PG24
VRR

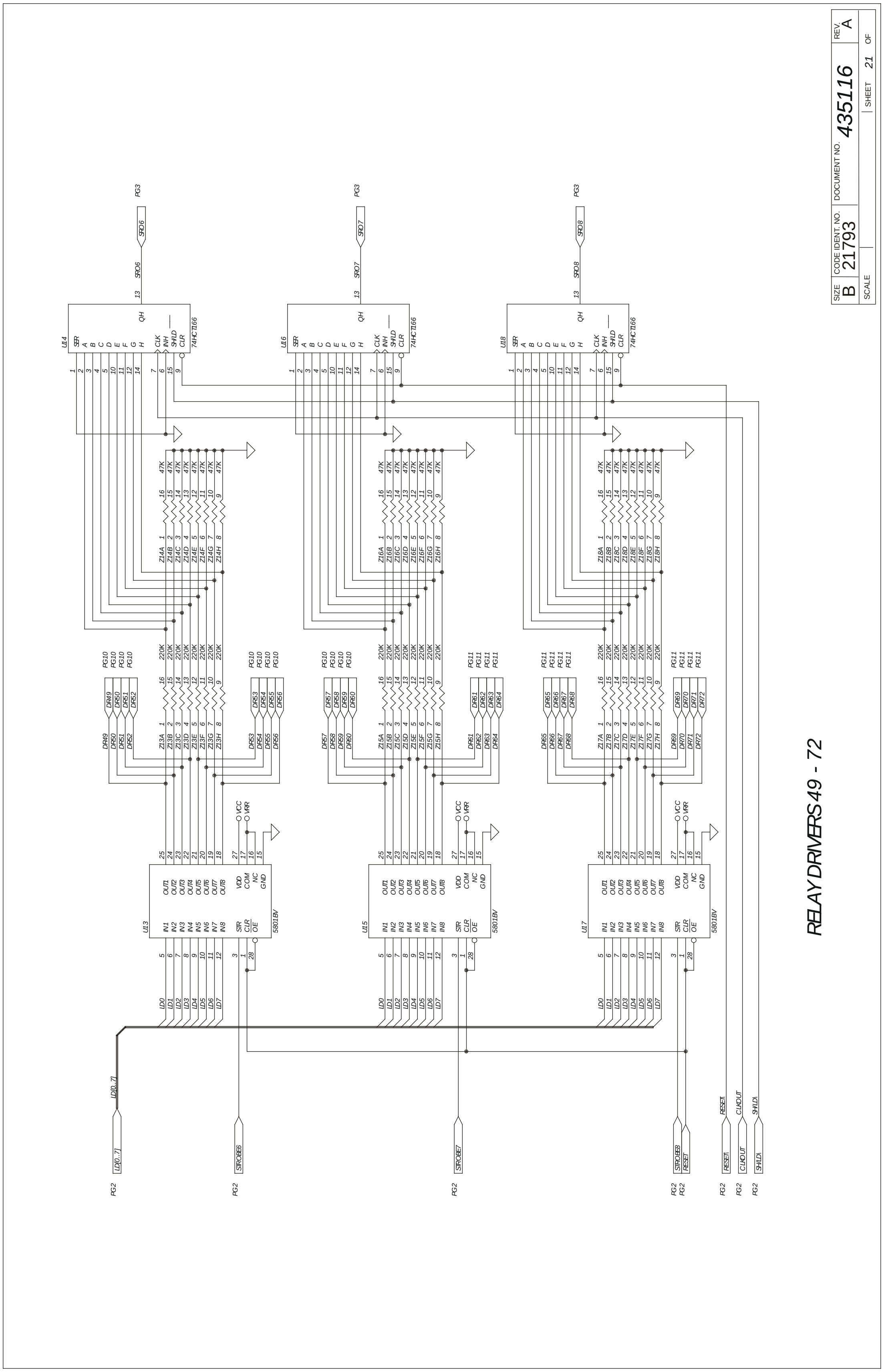


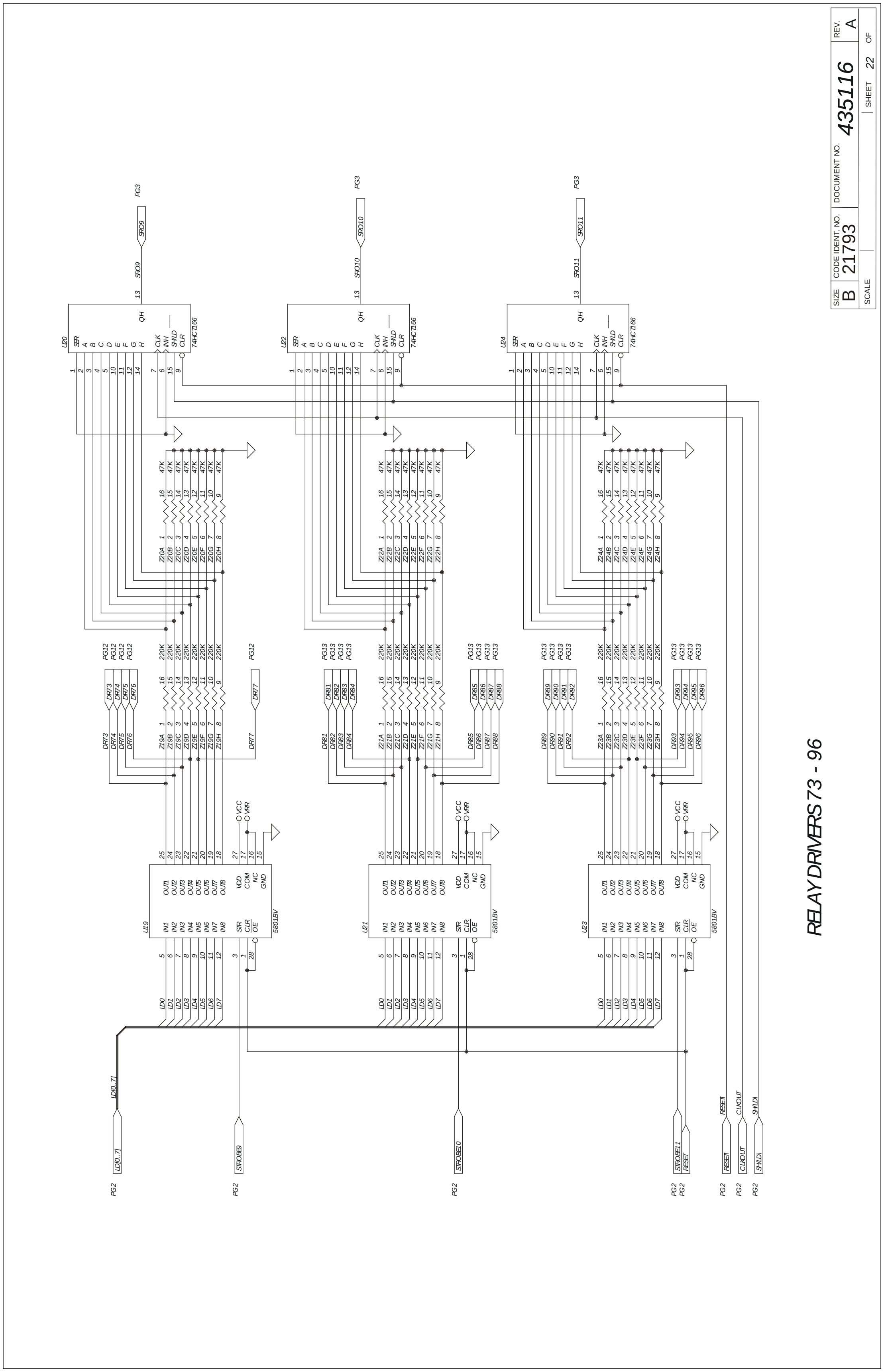
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 17 OF
PG18
PG25
VRR
K145
K146
K147
K148
K149
K150
K151
K152
K153
K154
K155
K156
K157
K158
K159
K160
DR145
DR146
DR147
DR148
DR149
DR150
DR151
DR152
DR153
DR154
DR155
DR156
DR157
DR158
DR159
DR160

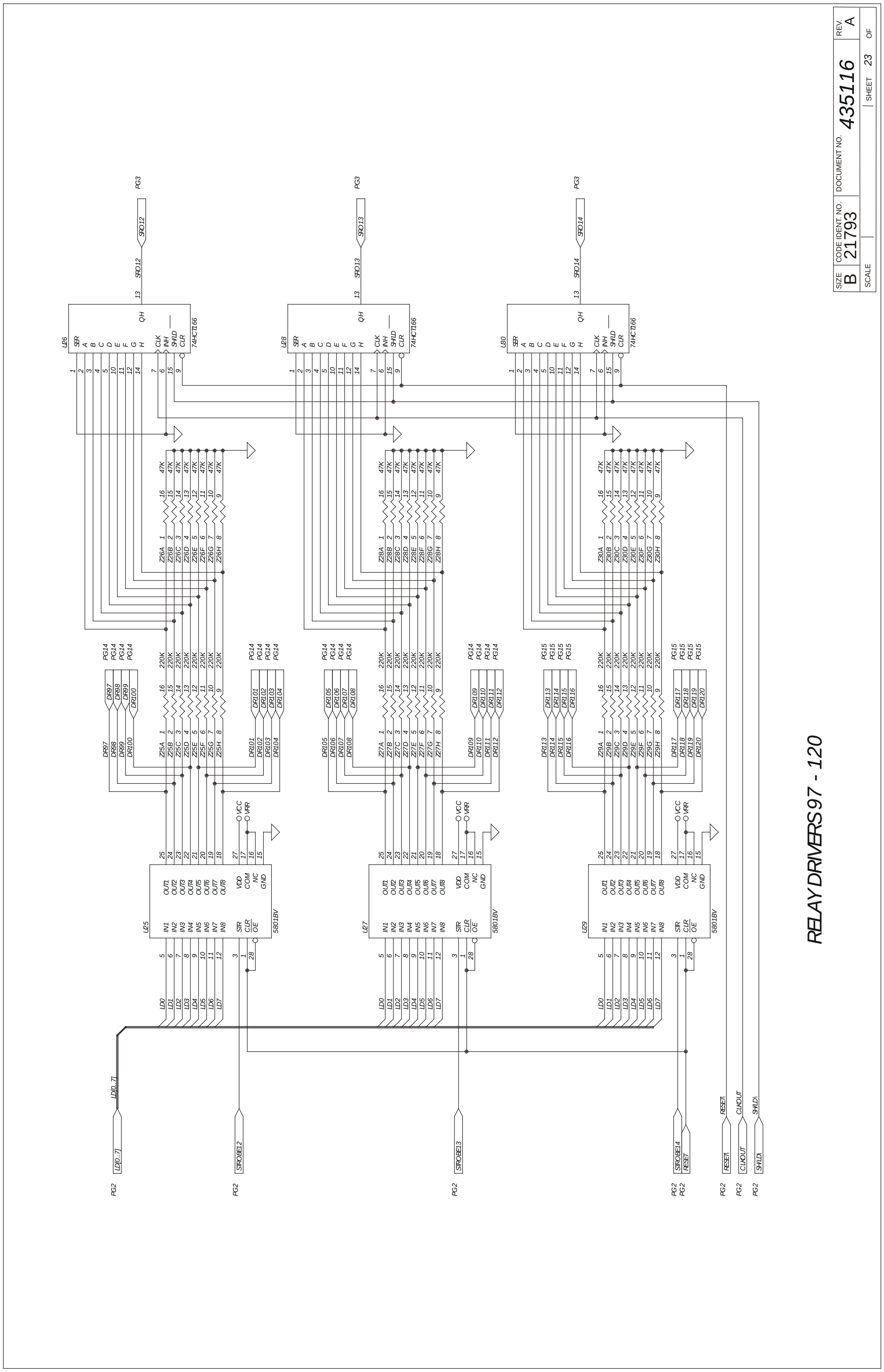

FRONTPANEL CONNECTORS
SIZE B
CODE IDENT. NO. 21793
DOCUMENT NO. 435116
REV. A
SCALE
SHEET 18 OF

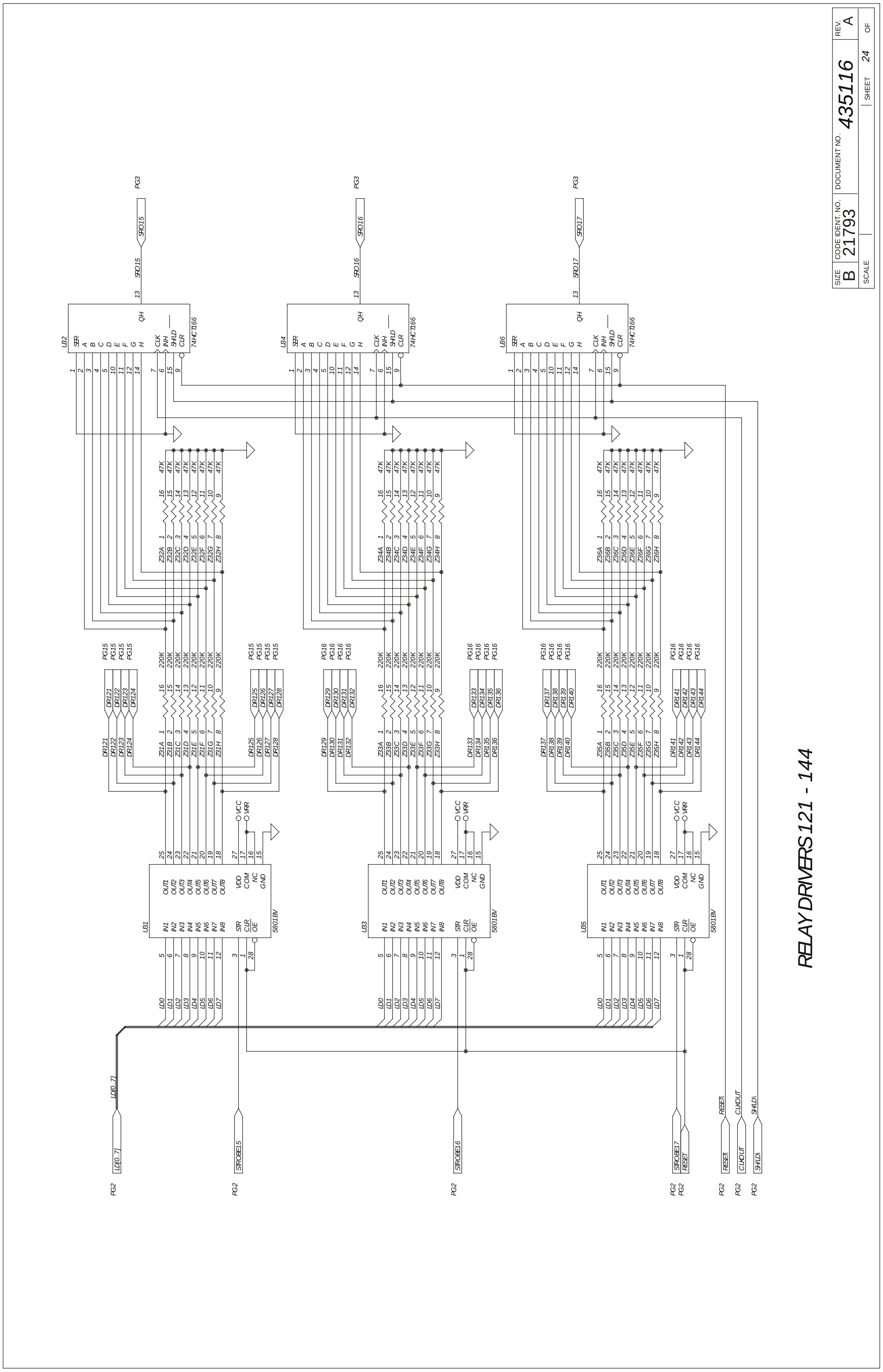

RELAY DRIVERS 1 - 24
SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 19 OF

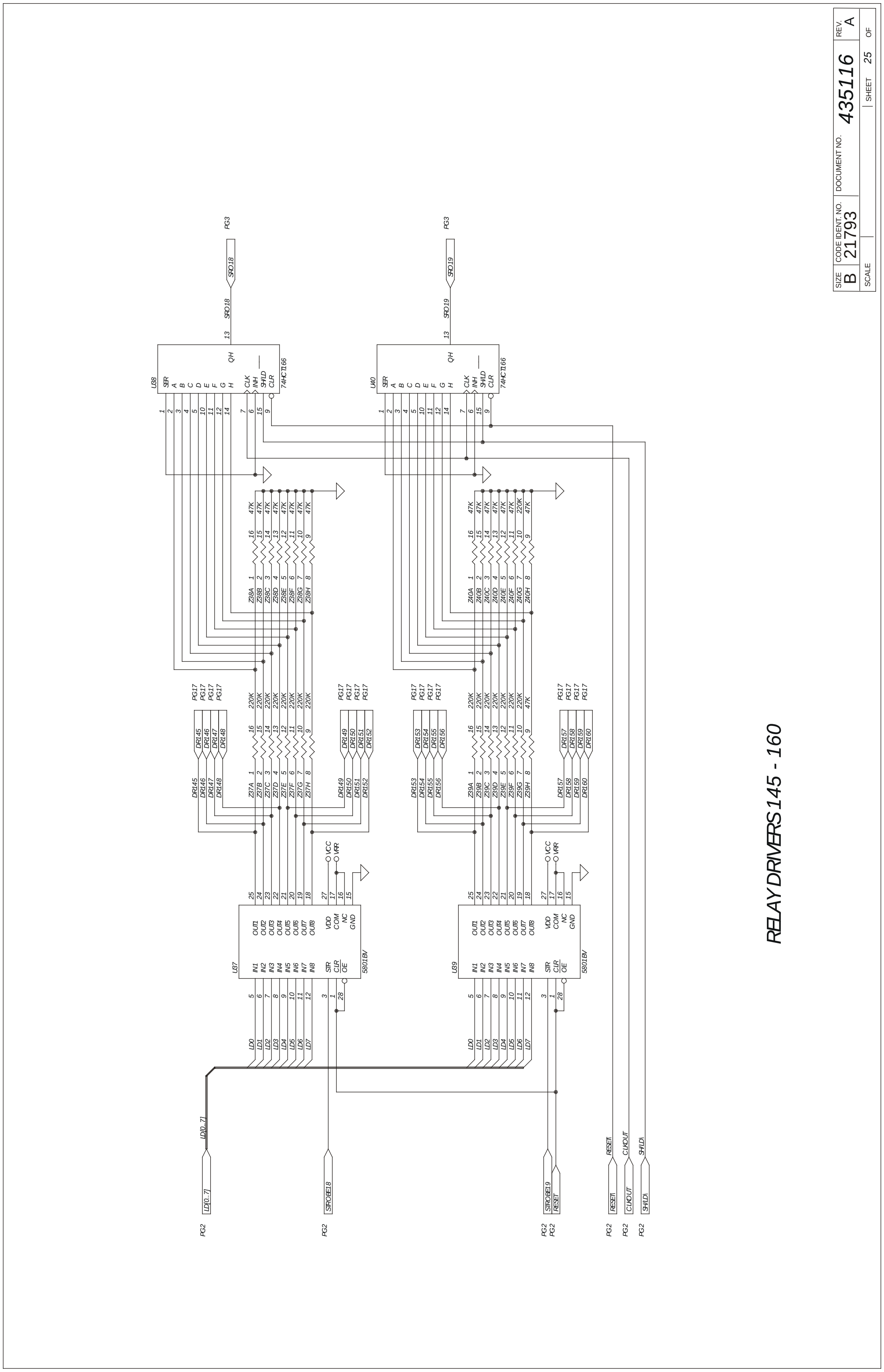

RELAY DRIVERS 25 - 48
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435116
REV. A
SCALE
SHEET 20 OF

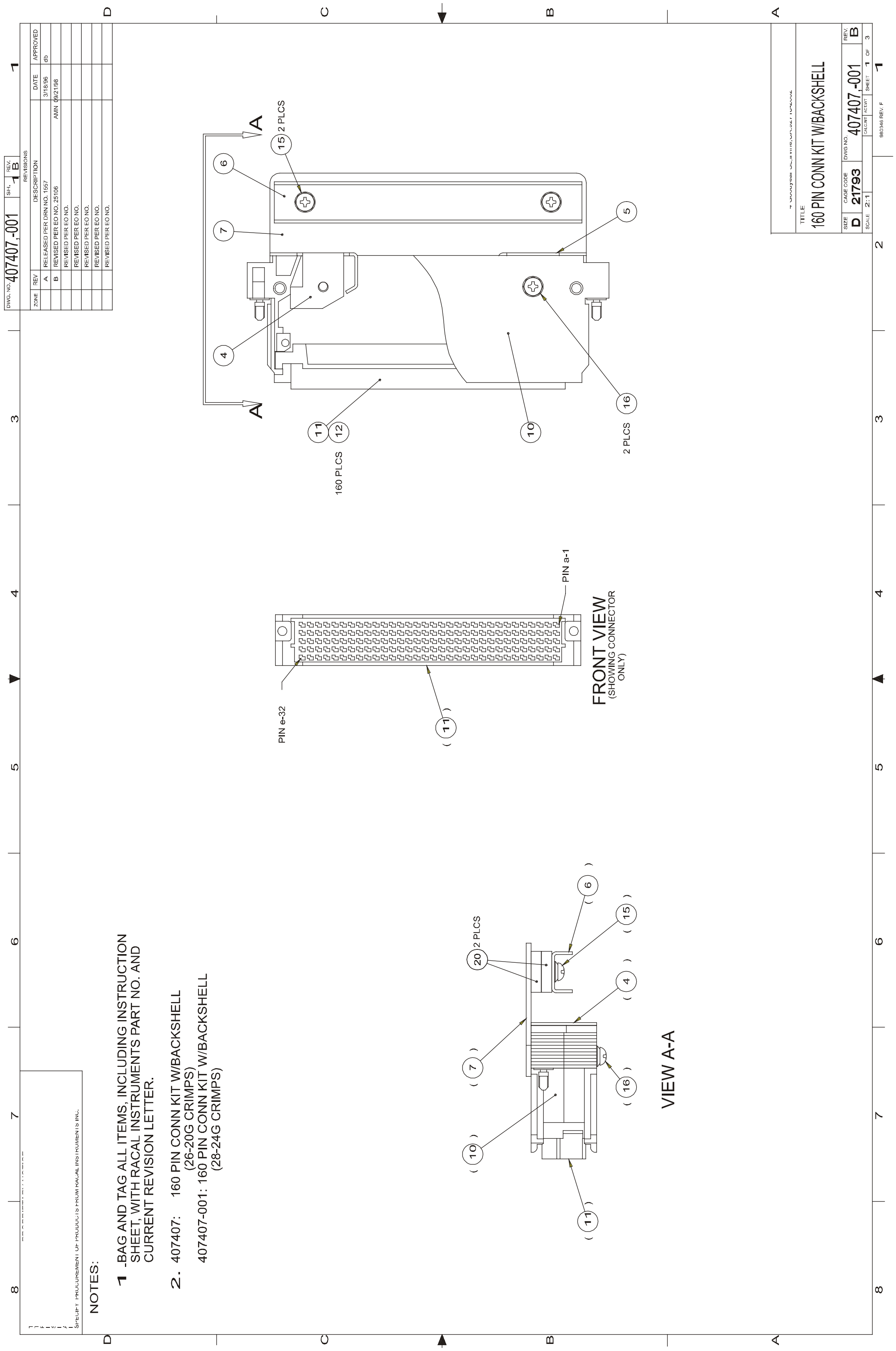

RELAY DRIVERS 49 - 72
SIZE B
CODE IDENT. NO. 21793
DOCUMENT NO. 435116
REV A
SCALE
SHEET 21 OF

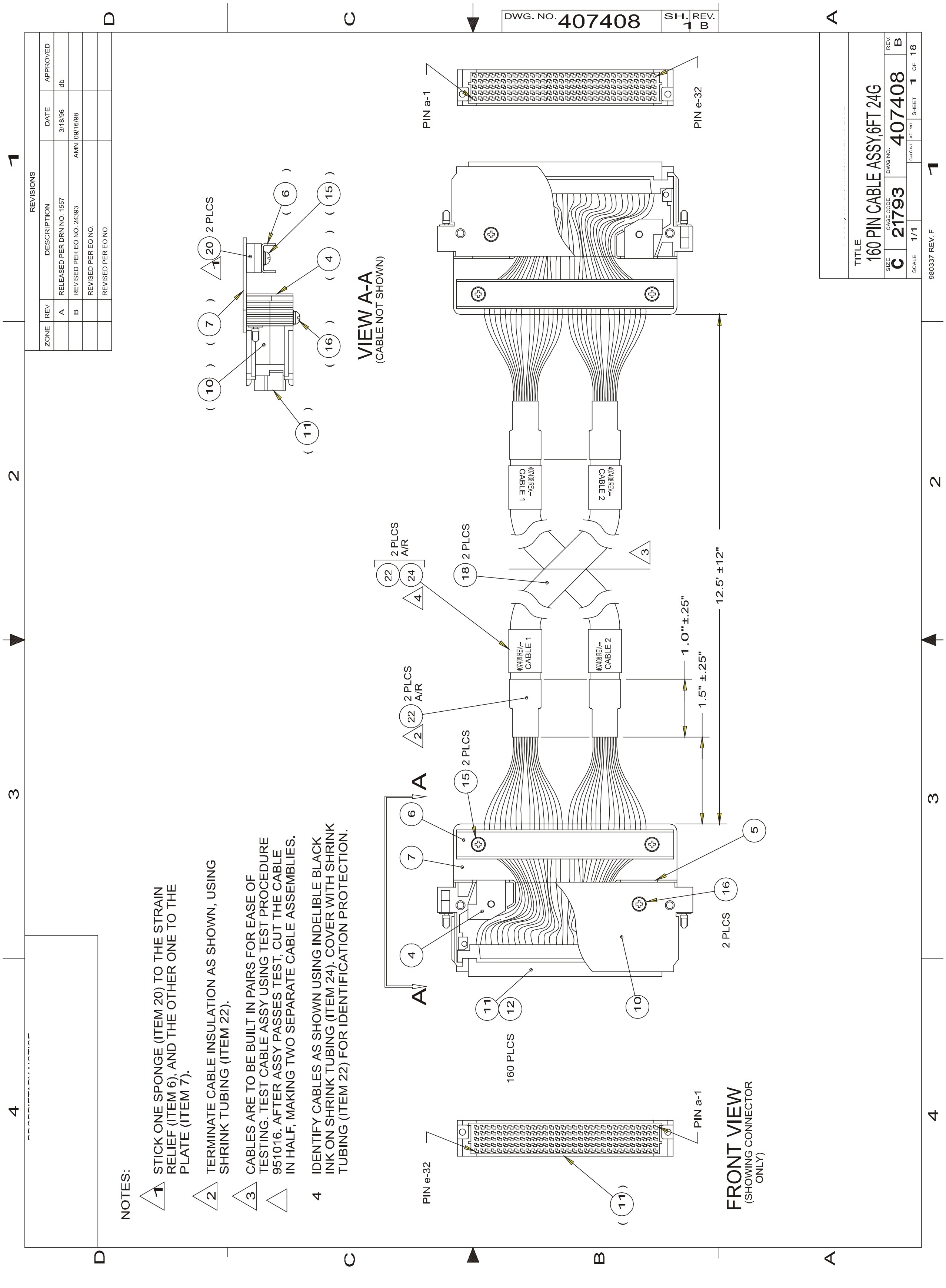

RELAY DRIVERS 73 - 96
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 22 OF

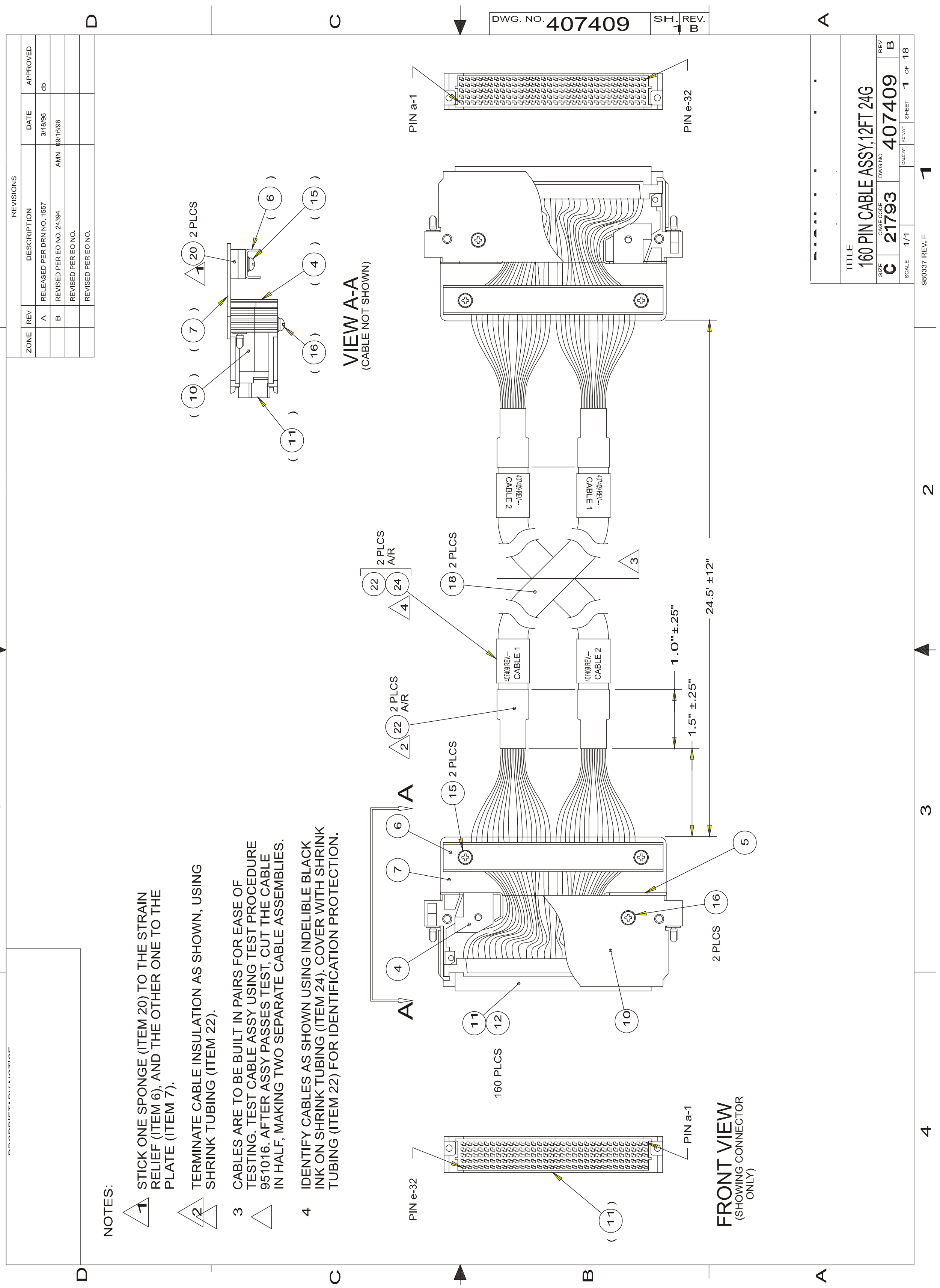

RELAY DRIVERS 97 - 120
SIZE
B
CODE IDENT. NO.
21793
DOCUMENT NO.
435116
REV.
A
SCALE
SHEET 23
OF


RELAY DRIVERS 121 - 144
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435116
REV. A
SHEET 24 OF
SCALE
74HCT166
5801BV


RELAY DRIVERS 145 - 160
SIZE B
CODE IDENT. NO. 21793
DOCUMENT NO. 435116
REV. A
SCALE
SHEET 25 OF


DWG. NO. 407407-001 SH. 1 REV. B
REVISIONS
ZONE REV DESCRIPTION DATE APPROVED
A RELEASED PER DRN NO. 1557 3/18/96
B REVISED PER EO NO. 25106 AMN 09/21/98
A 2 PLCS
15
6
7
5
4
16
10
11 12
160 PLCS
2 PLCS
PIN a-1
PIN e-32
FRONT VIEW
(SHOWING CONNECTOR ONLY)
20 2 PLCS
VIEW A-A
NOTES:
1. BAG AND TAG ALL ITEMS, INCLUDING INSTRUCTION SHEET, WITH RACAL INSTRUMENTS PART NO. AND CURRENT REVISION LETTER.
2. 407407: 160 PIN CONN KIT W/BACKSHELL (26-20G CRIMPS)
407407-001: 160 PIN CONN KIT W/BACKSHELL (28-24G CRIMPS)
TITLE 160 PIN CONN KIT W/BACKSHELL
SIZE D CAGE CODE 21793 DWG NO. 407407-001 REV. B
SCALE 2:1 SHEET 1 OF 3


REVISIONS
ZONE | REV | DESCRIPTION | DATE | APPROVED
A | RELEASED PER DRN NO. 1557 | 3/18/96 | db
B | REVISED PER EO NO. 24393 | AMN 09/16/98
REVISED PER EO NO.
REVISED PER EO NO.
DWG. NO. 407408 SH. 1 REV. B
PIN a-1
PIN e-32
VIEW A-A
(CABLE NOT SHOWN)
2 PLCS
407408 REV.-- CABLE 1
407408 REV.-- CABLE 2
2 PLCS A/R
12.5' ±12"
1.0" ±.25"
1.5" ±.25"
160 PLCS
FRONT VIEW
(SHOWING CONNECTOR ONLY)
NOTES:
1 STICK ONE SPONGE (ITEM 20) TO THE STRAIN RELIEF (ITEM 6), AND THE OTHER ONE TO THE PLATE (ITEM 7).
2 TERMINATE CABLE INSULATION AS SHOWN, USING SHRINK TUBING (ITEM 22).
3 CABLES ARE TO BE BUILT IN PAIRS FOR EASE OF TESTING. TEST CABLE ASSY USING TEST PROCEDURE 951016. AFTER ASSY PASSES TEST, CUT THE CABLE IN HALF, MAKING TWO SEPARATE CABLE ASSEMBLIES.
4 IDENTIFY CABLES AS SHOWN USING INDELIBLE BLACK INK ON SHRINK TUBING (ITEM 24). COVER WITH SHRINK TUBING (ITEM 22) FOR IDENTIFICATION PROTECTION.
TITLE
160 PIN CABLE ASSY,6FT 24G
SIZE C
CAGE CODE 21793
DWG NO. 407408
REV. B
SCALE 1/1
SHEET 1 OF 18
980337 REV. F


DWG. NO. 407409 SH. 1 REV. B
REVISIONS
ZONE | REV | DESCRIPTION | DATE | APPROVED
A | RELEASED PER DRN NO. 1557 | 3/18/96 | db
B | REVISED PER EO NO. 24394 | AMN 09/16/98
REVISED PER EO NO.
REVISED PER EO NO.
VIEW A-A
(CABLE NOT SHOWN)
FRONT VIEW
(SHOWING CONNECTOR ONLY)
PIN a-1
PIN e-32
160 PLCS
2 PLCS
2 PLCS A/R
407409 REV-- CABLE 1
407409 REV-- CABLE 2
1.0"±.25"
1.5" ±.25"
24.5' ±12"
NOTES:
1 STICK ONE SPONGE (ITEM 20) TO THE STRAIN RELIEF (ITEM 6), AND THE OTHER ONE TO THE PLATE (ITEM 7).
2 TERMINATE CABLE INSULATION AS SHOWN, USING SHRINK TUBING (ITEM 22).
3 CABLES ARE TO BE BUILT IN PAIRS FOR EASE OF TESTING. TEST CABLE ASSY USING TEST PROCEDURE 951016. AFTER ASSY PASSES TEST, CUT THE CABLE IN HALF, MAKING TWO SEPARATE CABLE ASSEMBLIES.
4 IDENTIFY CABLES AS SHOWN USING INDELIBLE BLACK INK ON SHRINK TUBING (ITEM 24). COVER WITH SHRINK TUBING (ITEM 22) FOR IDENTIFICATION PROTECTION.
TITLE
160 PIN CABLE ASSY,12FT 24G
SIZE C CAGE CODE 21793 DWG NO. 407409 REV. B
SCALE 1/1 SHEET 1 OF 18
980337 REV. F

This page was left intentionally blank.

Chapter 5

PARTS LIST

Note: *The parts lists in this section can be used for illustrative and reference purposes but may not be the most current revisions. If the latest versions are important to you, please contact our Customer Service Department for assistance.*

This page was left intentionally blank.

407505 - FINAL ASSY, 1260-39

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{2}1	405116	PCB ASSY, 1260-39	21793	405116
{4}1	407504	SHIP KIT, 1260-39	21793	407504
{7}1	456238-002	PANEL, RIGHT, 1260-35	21793	456238-002
{8}1	456239-002	PANEL, LEFT, 1260-35	21793	456239-002
{10}1	456438-001	BRACKET, CONNECTOR MOUNTING, TOP	21793	456438-001
{11}1	456438-002	BRACKET, CONNECTOR MOUNTING, BOTTOM	21793	456438-002
{13}1	456534	PANEL, FRONT, 1260-39	21793	456534
{15}1	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{16}1	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{17}0.5	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{20}2	616305	SCREW, PPH, M2.5X12	-	-
{21}4	616400	SCREW, PFL, M2.5X4	-	-
{23}2	616405	SCREW, PFH, M2.5X12	-	-
{24}6	616414	SCREW, PFL, M3X.5	-	-
{26}2	610264	WASHER, INSULATING, .25X.12X.02	21793	610264
{29}1	920927	BUMPER, ADHESIVE BACK	53387	SJ-5003BUMPON
{30}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{32}1	921059	LABEL, CAUTION, STATIC	21793	921059
{33}1	921148-001	LABEL SET VXI	21793	921148-001
{34}1	921309	LABEL, VXI SWITCH ID	21793	921309
{35}1	921423	LABEL, CE-96	21793	921423

407504 - SHIP KIT, 1260-39

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}2	455540	KEY, LOCKOUT, TTL, A/C	21793	455540
{2}2	455541	KEY, LOCKOUT, TTL, A/C	21793	455541
{3}2	455542	KEY, LOCKOUT, TTL, A/C	21793	455542
{4}3	615013	SCREW, PPF, 2-56 X .188	-	-
{5}1	980673-043	MANUAL, 1260-39	21793	980673-043

405116 - PCB ASSY, 1260-39

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
C1-C4	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C5	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C6	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C15	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
C100-C102	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C103	130198	CAP, CHIP, 150NF, 35V, 10PCT	04222	TAJA154K035R
C104-C106	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C108	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C110	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C113	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C116-C118	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C120-C125	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C127-C144	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C166	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C167	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
J3	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J4	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J200	602249-116	CONNECTOR, PCB, PLUG, 160 PIN, 5 ROW	58730	MVC160-0122-2
J201	602283	CONNECTOR,RECEPTACLE,PCB, RT. ANGLE, 34 PIN	00779	213574-2
J202	601856-034	CONNECTOR, SMPL, PCB RCP	28198	SMPL34FOTOLB
K1-K72	310256	RELAY, ELECTRO-MECH, 2P2T, 2A,24V	61529	TX2-24V
K73	310199	RELAY, POWER, 2 FORM A	61529	ST2E-DC24V
K74	310199	RELAY, POWER, 2 FORM A	61529	ST2E-DC24V
K75	310199	RELAY, POWER, 2 FORM A	61529	ST2E-DC24V
K75	310199	RELAY, POWER, 2 FORM A	61529	ST2E-DC24V
K77	310199	RELAY, POWER, 2 FORM A	61529	ST2E-DC24V
K81-K160	310256	RELAY, ELECTRO-MECH, 2P2T, 2A,24V	61529	TX2-24V
L1	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L2	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L3	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L4	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L5	600245	JUMPER, INSULATED	52210	L-2007-1
P1	601675	CONNECTOR, EUROCARD TYPE C, 96-PIN	00779	532505-1
P2	601675	CONNECTOR, EUROCARD TYPE C, 96-PIN	00779	532505-1
Q1	200320	TRANSISTOR, NPN	04713	MMBT3904
R17	050000-102	RES, CHIP, 1K, .06W, 5PCT	91637	CRCW-0805SERIES
R18	050000-332	RES, CHIP, 3.3K, .06W, 5PCT	91637	CRCW0805SERIES
R19	050000-102	RES, CHIP, 1K, .06W, 5PCT	91637	CRCW-0805SERIES
R20	050000-102	RES, CHIP, 1K, .06W, 5PCT	91637	CRCW-0805SERIES
SW1-SW3	601969	SWITCH, DIP 6 POS, LOW PROFILE	65832	K406S
TP1	601197	POST, TEST, .025 SQ	00779	6-87022-6
TP2	601197	POST, TEST, .025 SQ	00779	6-87022-6
U1	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U2	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U3	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U4	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U5	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U6	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U7	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U8	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U9	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U10	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U11	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U12	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U13	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U14	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U15	231555	IC, BIT PARALLEL-INTPUT LATCHED DRIVERS	60496	MIC5801BV
U16	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U17	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U18	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D

405116 - PCB ASSY, 1260-39

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
U19	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U20	231120	IC, 8-BITE, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U21	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U22	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U23	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U24	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U25	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U26	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U27	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U28	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U29	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U30	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U31	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U32	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U33	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U34	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U35	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U36	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U37	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U38	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U39	231555	IC, BIT PARALLEL-INPUT LATCHED DRIVERS	60496	MIC5801BV
U40	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U53	231153-001	IC, PROGRAMMED, PAL	21793	231153-001
U54	231445	IC, 3-TO-8 LINE DECODER/MUX	18324	74HCT138D
U55	231445	IC, 3-TO-8 LINE DECODER/MUX	18324	74HCT138D
U56	231135	IC, DIGITAL, 4-BIT COMPARATOR	18324	PC74HCT85D
U57	231093	IC, QUAD COMPARATOR	04713	LM339D
U60	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U61	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U62	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U70	231152-002	IC, PROGRAMMED, PAL	21793	231152-002
U71	231147	IC, MULTIPLEXER	04713	74HC253D
U72	231147	IC, MULTIPLEXER	04713	74HC253D
U73	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U74	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U75	231125	IC, DIGITAL, LINE DRIVER	27014	DS26LS31MN
U76	231154	IC, PROGRAMMED PLA	21793	231154
U77	231147	IC, MULTIPLEXER	04713	74HC253D
U78	231445	IC, 3-TO-8 LINE DECODER/MUX	18324	74HCT138D
U79	231091	IC, OCTAL BUFFER	18324	74HC240D
U80	231091	IC, OCTAL BUFFER	18324	74HC240D
U81	231091	IC, OCTAL BUFFER	18324	74HC240D
U82	231119	IC, SHIFT REGISTER	18324	74HCT299D
U83	231147	IC, MULTIPLEXER	04713	74HC253D
Z1	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z2	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z3	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z4	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z5	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z6	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z7	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z8	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z9	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z10	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z11	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z12	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z13	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z14	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z15	080119	RES NETWORK, 220K	91637	SOMC-1603-224K

405116 - PCB ASSY, 1260-39

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
Z16	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-47J
Z17	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z18	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z19	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z20	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z21	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z22	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z23	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z24	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z25	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z26	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z27	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z28	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z29	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z30	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z31	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z32	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z33	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z34	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z35	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z36	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z37	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z38	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z39	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z40	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z127	080114	RES NETWORK, 16P8R, 15K	73138	628-AL-153J
Z128	080120	RES NETWORK, 10K	11236	767-161R10K
{58}1	401951	PCB ASSY., LBUS JUMPER	21793	401951
{59}1	401951-003	PCB ASSY., P3 JUMPER	21793	401951-003
{60}1	415116	PCB, 1260-39 (UNLOADED)	21793	415116
{64}A/R	500022	WIRE, BARE COPPER/TIN, 22 GA	21793	500022
{81}2	611367	STANDOFF, ROUND SWAGE, M3X0.5X4.3	06540	21003B-B-0350-28(L4.3
{82}1	611366	STANDOFF, ROUND SWAGE, M3X0.5X19	06540	21017-B-0350-28
{87}A/R	921280	LOCTITE, HIGH STRENGTH	05972	27121

407407 - 160 PIN CONNECTOR KIT W/BACKSHELL

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{4}1	456437-001	BRACKET, STIFFENER, TOP	21793	456437-001
{5}1	456437-002	BRACKET, STIFFENER, BOTTOM	21793	456437-002
{6}1	456439	STRAIN RELIEF	21793	456439
{7}1	456440	PLATE, SHELL MOUNTING	21793	456440
{10}1	602255-001	HOUSING CABLE, MODIFIED	21793	602255-001
{11}1	602258-116	CONNECTOR, CABLE, RECEPTACLE, 160 PIN	6V439	024070
{12}170	602258-900	TERMINAL, CRIMP, SNAP-IN, 26-20 GA	6V439	014728
{15}2	616252	SCREW, PPH, SEMS ASSY, 4-40X.312	78189	SEMS W/SQ CONE WA.
{16}2	616254	SCREW, PPH, SEMS ASSY., 4-40 X .500	78189	SEMS W/SQ CONE WA.
{20}2	456502	SPONGE, PRESSURE, 1260-38	21793	456502
{24}1	980785	INSTRUCTION SHEET, 160 PIN KIT	21793	980785

407408,407409 - 160 PIN CABLE ASSY, 24G

REF DESIG	P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{4}1	456437-001	BRACKET, STIFFENER, TOP	21793	456437-001
{5}1	456437-002	BRACKET, STIFFENER, BOTTOM	21793	456437-002
{6}1	456439	STRAIN RELIEF	21793	456439
{7}1	456440	PLATE, SHELL MOUNTING	21793	456440
{10}1	602255-001	HOUSING CABLE, MODIFIED	21793	602255-001
{11}1	602258-116	CONNECTOR, CABLE, RECEPTACLE, 160 PIN	6V439	024070
{12}160	602258-900	TERMINAL, CRIMP, SNAP-IN, 26-20 GA	6V439	014728
{15}2	616252	SCREW, PPH, SEMS ASSY, 4-40X.312	78189	SEMS W/SQ CONE WA.
{16}1	616254	SCREW, PPH, SEMS ASSY., 4-40 X .500	78189	SEMS W/SQ CONE WA.
{18}A/R	500319	CABLE, 40 CONDUCTOR, 24 GA UNSHIELDED	92194	5020/80C
{19}2	456502	SPONGE, PRESSURE, 1260-38	21793	456502
{22}A/R	M23053/5-109-0	SLEEVING, INSUL. HEAT SHRINK, .75D, CLR	81349	M23053/5-109-0
{24}A/R	M23053/5-109-4	SLEEVING, INSUL. HEAT SHRINK, .75D, YEL	81349	M23053/5-109-4

List of Suppliers

FSC	SUPPLIER
00779	AMP, INC. HARRISBURG, PA
01121	ALLEN BRADLEY CO. MILWAUKEE, WI
01295	TEXAS INSTRUMENTS, INC. DALLAS, TX
04222	AEROVOX CORP. (HI-Q DIV.) MYRTLE BEACH, SC
04713	MOTOROLA, INC. (SEMICONDUCTOR PRODUCTS DIV.) PHOENIX, AZ
05397	UNION CARBIDE CORP. (MATERIALS SYSTEMS DIV.) CLEVELAND, OH
06540	AMATOM ELECTRONIC HARDWARE NEW ROCHELLE, NY
11236	CTS OF BERNE, INC. BERNE, IN
18324	SIGNETICS, INC. SUNNYVALE, CA
21793	Astronics Test Systems Irvine, CA
27014	NATIONAL SEMI-CONDUCTOR CORP. SANTA CLARA, CA
52072	CIRCUIT ASSY. CORP. COSTA MESA, CA
52210	GETTING ENGRG. & MFG. CO. SPRING MILLS, PA
53387	THREE M (3M) CO. ST. PAUL, MN
58730	THOMAS & BETTS CO. ELIZABETH, NJ
60496	MICREL INC. SUNNYVALE, CA
61529	AROMAT CORP. CUPERTINO, CA
62559	SCHROFF, INC. WARWICK, RI
65832	AMERICAN RESEARCH & ENGINEERING ELGIN, IL
6V439	ERNI COMPONENTS INC. RICHMOND, VA

FSC	SUPPLIERS
73138	BECKMAN INSTRUMENTS FULLERTON, CA
78189	ILLINOIS TOOL WORKS, INC. (SHAKEPROOF DIV.) ELGIN, IL
91637	DALE ELECTRONICS, INC. COLUMBUS, NE
92194	ALPHA WIRE ELIZABETH, NJ
95275	VITRAMON, INC. BRIDGEPORT, CT

This page was left intentionally blank.